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ABSTRACT

A model is presented for response to evaluating instruction in a university based on the teaching-at-a-distance concept. Technically appropriate and operationally viable, this model is applied to the National Open University of Venezuela (UNA). The model is based on two principles of educational evaluation: (1) the concept of evaluation as a supporting activity for decision-making, by providing the adequate information to each decision level and for each type of decision; and (2) the idea that evaluation has to be responsive to the concerns, needs, and specific situation of the intended audiences. Chapter I reports the purpose of the study, the conceptual framework, the institutional context, evaluation "hypotheses" and the research organization. Chapter II reviews the literature with focus on the Open University, an evaluation of instructional systems and a summary of requirements for the course evaluation system (CES). Chapter III presents the method and design examining such areas as evaluation stages, evaluation criteria, guidelines for reporting, and recommendations. Recommendations focus on UNA action necessary to implement the model such as initiating the model through an institutional seminar. Appendices include: the questionnaire for the evaluation of course plans, questionnaire for the evaluation by experts of texts and study guides, questionnaire for the evaluation of audiovisual programs, and a student survey of the local center services. (LC)

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A COURSE EVALUATION SYSTEM IN AN OPEN UNIVERSITY

by
fabio chacón d.

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The Pennsylvania State University
The Graduate School
Department of Higher Education

A Proposal for a Course Evaluation System in an Open University

A Paper in
Hi Ed 596
Individual Studies in Higher Education

by
Fabio J. Chacon

Submitted to Prof. R. E. Sweitzer
in Partial Fulfillment
of the Requirements
for the Degree of

Master of Education

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ABSTRACT

It is presented in this paper a model for an evaluation system that intends to give a technically appropriate and operationally viable response to the challenges of evaluating instruction in a university based on the teaching-at-a-distance concept. Concretely, this model is applied to the National Open University of Venezuela (UNA), a recently founded institution that began to offer career programs in 1978, in the areas of Education, Business and Administration, Engineering and Mathematics. Instruction in UNA is based on specially packaged materials--individualized textbook or study guide, audiovisuals, lab kits and others--that are distributed in places near the students' homes. Additionally, the students have the opportunity to consult counselors and academic advisors of the subject matter content, and to perform supervised field experiences in real-work environments. Course assignments usually include presential exams, paper projects and other forms of assessment of learning.

The model is based on two contemporary principles of educational evaluation: a) The concept of evaluation as a supporting activity for decision-making, by providing the adequate information to each decision level and for each type of decision; b) The idea that evaluation has to be responsive to the concerns, needs and specific situation of the intended audiences, which means that evaluator and audiences must be in continuous interaction and permanently actualizing their common frames of reference.

The evaluation model that is called the Course Evaluation System (CES) is developed by specifying the following aspects:

1. "Hypotheses" for evaluation; derived from the institutional, curricular and instructional goals of UNA.
2. Conceptual evaluation model; derived from the principles discussed above.
3. Evaluation stages that parallel the phases of planning, design, production of instructional materials, and course development in UNA.
4. Evaluation Criteria for six key areas of analysis of the instructional system: Impact, Validation of Goals, Cost/Effectiveness, Content of Instruction, Instructional Quality, and User Perceptions.
5. Definition of the evaluation procedures for each stage, including the evaluation instruments.
6. The kind of organizational support required to make the system operative.
7. Some guidelines for the evaluator's role and the way of presenting reports to the audiences.

This model is suggested for discussion and eventual implementation in UNA.

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To the authorities of the National Open University of Venezuela, in the prior and current administrative periods, for creating and maintaining the staff development program with The Pennsylvania State University, which allowed me and others to do graduate studies. In this respect, I would like to mention particularly the names of Dr. Aline Lampe and Dr. Victor Guédez, to whom I owe the most direct support in my studies.

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To Cheryl Moss, who did a fine work with the typing of the originals of this paper, and became interested in the Open University idea as an educational alternative.

CHAPTER I

INTRODUCTION

Purpose of the Study

This study is aimed to present the model for an evaluation system applicable to the courses in the National Open University of Venezuela.[1] This is a non-traditional institution for Higher Education which offers career instruction in four main areas: Business and Administration, Education, Engineering and Mathematics. This university was created by a decree of the President of Venezuela in September 1977 and began to offer instruction to students in October 1978; therefore, it is a very new educational institution that has not yet graduated its first student. Currently, some 19,000 students are enrolled in several programs.

Instruction in UNA is offered mostly through a distance teaching system, similar to that of the Open University of England. This means that instruction is packaged by means of special individualized textbooks, audiovisual programs, laboratory kits and asessment materials; all of which are sent to the student who performs most of the learning activities at home. Additionally, UNA offers individual and group tutoring, and in-service training in actual work situations as complementary activities to the learning courses.

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[1] From now on, this institution will be identified with the logo "UNA," corresponding to Universidad Nacional Abierta.

UNA is a compound of a central headquarters offices, located in Caracas, the capital city, and 21 local centers dispersed throughout the country.[2] The teaching and assessment materials for the courses are designed at the headquarters, and then disseminated to the local centers where they can be obtained (or used) by the students. Each local center basically offers to the student the following services: delivery of the course packages, guidance and tutorials to help the students go ahead with their programs, multimedia library facilities, administration of presential exams and tutor-marked evaluations (i.e., papers, practical course-work, etc.) for obtaining academic credits and a coordination of contacts with local institutions and industries that may provide in-service training and/or equipment facilities.

Currently, UNA offers ten study programs, which are shown in Table 1. The most advanced students in those programs are in their third year. It is intended that when the institution is settled down, new programs will be offered. The curricula for those programs are highly structured, meaning that they offer an almost compulsory set of courses in order to complete the credit units required for a degree. The eligibility among alternative courses is concentrated in the last two years of the career. This is a characteristic of most of the curricula in Venezuelan universities, and it comes from the Spanish and French heritage.

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[2] Venezuela is geographically the most north-bound country of South America, with shore to the Caribbean. Its surface area is 352,143 square miles. It is composed of 23 federal entities (20 states, a capital district and 2 territories). In most of them UNA has a local center.

TABLE 1

CAREER PROGRAMS IN THE OPEN UNIVERSITY OF VENEZUELA

AREA	PROGRAM		MINIMUM N° OF YEARS REQ.
EDUCATION (*)	Child Education	Higher Technician	3½
	Learning Disabilities	Higher Technician	3½
	Mathematical Education	Licency	5
BUSINESS & ADMINISTRATION	Private Administration	Licency	5
	Public Administration	Licency	5
	Public Accounting	Accountant	5
ENGINEERING	Industrial Engineering	Engineer Industrial	6
	Systems Engineering	Engineer Systems	5
MATHEMATICS	Applied Statistics	Licency	5
	Applied Calculus	Licency	5

(*) The programs for Child Education and Learning Disabilities are offered currently as short careers, mostly for the improvement of school teachers. It is expected that in the future a 5 year degree will be offered in those fields.

A particular trait of the study programs in UNA is that students share an Introductory Course (8 weeks), aimed at preparing the student for the new form of education--based on distance teaching. Following this course, they also share in common a two-semester cycle of General Studies, with courses in College Math, Language, Inquiry and Research Skills, Basic Physics, and so on. This cycle is always at the beginning of the program. Furthermore there is a part of the "general Studies" that parallels the professional courses: it is the "Critical Thinking" component, which is intended for value and attitude changes in the student. The subject matter of this component deals with the analysis of social structure, the problems of social and economic development, the place of science in a developing society, and the ethics of the professions.

It is obvious that a non-traditional higher education system, with such an ambitious and diversified curricula, raises a lot of questions about how effective can it be, how the students react to it, what is the instructional and scientific quality of the materials, and many other issues. These are typically questions to be answered by systematic evaluation. One would expect, then, that the operation of UNA should be monitored constantly by an evaluation program. However, this has not been the actual reality. The evaluation function in UNA has had a rather low rate of development due to many problems that are typical of a new institution: lack of a complete staff, lack of clear guidelines for the operation of the system, conflicting priorities with other functions, and so on. Most of the work in this area has been concentrated in the design of procedures and instruments for the academic assessment of the student. There have been efforts for evaluating some of the courses,[3] but these are still far from achieving a permanent and comprehensive evaluation system. Later, it will be analyzed why UNA requires an evaluation system with those characteristics.

In spite of this situation of slow development in the evaulation function, there has been a permanent concern for it among the people in the administration and the faculty of UNA. Many ideas have been generated on the subject through the four years of operation. In 1981, the Academic Evaluation Unit[4] designed a series of policies and instruments for evaluating the instructional materials and these will begin to be applied in November of 1981. This may be conceived as the initiation of a formal evaluation system in UNA.

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[3] Evaluation studies, however not completed yet, have been applied to the Introductory Courses and some courses in the General Studies. See: Sub-Programa de Servicios al Estudiante, Resultados de la Evaluacion del Curso Introductorio. (1978. Mimeo available in the Archives of UNA.)

Given the preceding conditions, the purpose of this study may be stated briefly as the design of a conceptual model and a set of procedures for the evaluation of courses and curricula in UNA. This model will be identified, from now on, as the Course Evaluation System (CES). It is hoped that this study will serve, not only as an intellectual exercise, but as a paper for discussion among the concerned people in UNA, in order to enlighten and promote the future design of a complete evaluation sub-system which would be able to monitor the development of such an important educational innovation.

Conceptual Framework

The Concept of Evaluation

Every instructional system--a school, an institute for training, a university, a continuing educational center, an academy--is compelled, by external and internal reasons, to perform a series of operations dealing with the judgment of merit of its processes and products. As the external reasons may be counted the following: the need of providing adequate support for the credentials issued by instruction as valid certificates of proficiency in given areas, and the need of acquiring respectability among other similar institutions and among the potential users. The main internal reasons lay in the need of permanently ameliorating the quality of processes and products by adding inputs from the actual practice. This process of judging something, according to given goals and standards, and then providing information that is useful to show evidence of certain achievement and/or to prompt corrective action, is the essence of what is known as evaluation.

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[4] Unidad de Evaluacion Academica, Criterios y Procedimientos de Evaluacion Formativa de Materiales Instruccionales. (Mimeo for internal circulation, April 1981, Caracas). This work will be used as a partial input for this study.

Currently, the concept of evaluation is a subject for academic controversies,[5] because there is a variety of points of view according to which the ideas about evaluation can be organized. Some authors stress the importance of precise measurement, some others focus in checking the achievement of goals, some in the importance of producing information to help decision-making, and so on. As the purpose of the present study is to provide guidelines for a particular evaluation system, this controvesy among theorists will not be dealt with in depth; instead of that, the Review of the Literature section depicts a brief discussion of the history of the ideas on evaluation that are most meaningful for building the evaluation model proposed for UNA.

The definition of evaluation used in this study, as a kind of "generator of guidelines" for the design of an evaluation model, borrows some ideas from Daniel Stufflemean and co-workers (1971) and some from Stake (1975).[6] It will be stated, then, that:

---

[5] Guba & Lincoln, "Effective Evaluation," (San Francisco: Jossey-Bass Publishers, 1981) depict (pages 1 to 39) the evolution of evaluation conceptions and point out that in the eighties era the dominant characteristic of the area is the prevalence of several evaluation models that they group into five categories. None of these models can be told as the definite solution to evaluation problems.

> Educational evaluation is a process for determining information needs, obtaining this information by means of judgmental procedures, and providing it in such ways that it can be used by interested parties to influence the behavior of people.

An examination of the key components of this definition is given in the following lines:

"process"--it is a continuous activity, involving stages and operations.

"for determining information needs"--this is the first step in an evaluation cycle: to identify what kind of information is required for the type of uses that are intended. This involves the formulation of criteria.

"obtaining this information"--involves the utilization of systematic or informal procedures for measurement, collection of data, analysis and interpretation.

---

[6] Daniel Stufflebeam, et al., Educational Evaluation and Decision Making (Itasca: Peacock Pubs., 1971) stated a very influential concept of evaluation, based on a managerial approach to educational organizations: ". . . is the process of delineating, obtaining and providing useful information for judging decision alternatives," page 40. Five years later, Stake, Evaluating the Arts in Education (Columbus: Remik, 1975), made an important derivation from this definition by stressing the who of the decision-making, meaning the audiences or "stakeholders" which use the information coming from evaulation for two specific purposes, influenced by value orientations. These two main approaches are fused into the definition of this study.

"by means of judgmental procedure"--evaluation implies judging the value or merit of the thing being evaluated. This is done by comparing it with other things, with some specified goal or standard, or with some idea of the "would be desirable."

"providing it"--reporing the evaluative information in opportune and understandable form to the user.

"interested parties"--evaluation information is provided to agents--individuals or groups--that have concerns about the processes being evaluated. These concerns are determined by technical and rational conceptions, but also by political or attitudinal factors.

"to influence the behavior of people"--this phrase stresses the final outcome of evaluation, which is to provide support for decision making or actions that somehow influence the behavior of people. This final outcome sometimes may not be reached; but in that case the evaluation process is not completed. The "people" that are influenced usually belong to the institution or program being evaluated, but also the evaluation results may influence external audiences, even unrelated to that program.

Two characteristics of this definition deserve a special mention, because they influence highly the evaluation model to be proposed in this paper. In the first place, it contains a paradigm of the events that must be considered when designing and applying an evaluation procedure: a) determine needs; b) obtain information; c) use judgment to value; d) report results and conclusions; e) motivate audiences to use the information; f) apply follow-up to the outcomes of the evaluation. This paradigm is the core of the definition of the procedures for the Course Evaluation System of UNA. Secondly, even when the definition is based largely in the idea--postulated by Daniel Stufflebeam--[7] of the evaluation system as a support for decision-making, it is assumed also that the real educational organizations do not act completely upon a "rational" basis, but that frequently they are influenced by political[8] contrivances. For that reason, often evaluation is not used for the purpose stated by the evaluator, but for another purpose even contrary to it. At other times, the decisions are made before the evaluation, then it is used only as a post-hoc argument.

Evaluation Types

Evaluation activities differ in many important aspects: methods or techniques used, level of specificity of their scope, kind of agencies that do the evaluation, and so on. This difference may suggest the possibility of building a very complex taxonomy of evaluations. However, this intent will prove to be of little utility because all the categories in any of the classifications will be overlapped to a great extent. For a classification focused in the utility of the evaluation activities, and in concordance with the evaluation definition that has been stated, the most suitable criterion for grouping will be that of the purposes of the evaluations, because this criterion indicates the intended use of the results, and also may be connected to the intended users. However, due to the frequent lack of rationality in educational decisions, as it was pointed out above, the criterion of purpose should be used with flexibility; i.e.: it is very possible that an evaluation that was designed to help improve an educational program ends as an allegation to terminate that program. Having this in mind, five broad categories of evaluations may be stated according to the purposes they seek.[9] Thus, the evaluative information may be obtained with the prospect of achieving the following purposes:

---

[7] Daniel Stufflebeam, Op. cit., 1971. All this book is dedicated to depict a highly sophisticated evaluation system called CIPP (for Context, Input, Process and Product Evaluation), which would support the overall decision-making of educational institutions in respect to Planning, Organization of Resources, Monitoring of Operations, and Recyclage of Products.

[8] To several authors, universities are institutions in which two forms of rationality pervade the decision-making: technical rationality, in respect to the analysis of problems in scientific or logical ways, and political rationality, in respect to the transactions of influence among the groups that form the institution.

a. Give rationale for the establishment of goals for the educational system, by determining the social needs or problems that have to be met. This is context or needs evaluation.

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[9] These evaluation types are borrowed from the four types proposed by Stufflebeam (Op. Cit., 1971, Chapter 7), plus one more type which accounts for the interactions between those four types.

b. Give criteria for the improvement or more efficient use of the resources of the system: people, materials, programs, financial credits, time, etc. This is called input evaluation.

c. Facilitate the improvement of the on-going educational activities, by monitoring them constantly. This is process evaluation.

d. Assess the outcomes of the educational system in terms of quality and quantity of learning, changes in groups and/or institutions, impact on students' attitudes, impact on society. This is product evaluation.

e. Appraise the operation of the system as a whole; which means to interrelate the data of the former modes of evaluation, in order to make generalized statements about the value of the system. This is program evaluation, or institutional evaluation.

It may be observed that categories (a) and (e) are more general than the others. They allow for an adequate planning of the system. Needs evaluation, pursues a continuous actualization of the goals of the educational system: which is an open system in constant interaction with a changing environment; for that reason, the goals and needs must be periodically re-stated, in order to cope with changes. Program and Institutional Evaluation integrates the data of other evaluations and the rationales and norms underlying the institutional processes, in order to present a picture of the general effectiveness and efficiency of the system, its major strengths and weaknesses.

A general paradigm of an educational system, and the five evaluation types, is represented in Figure 1. This model is applicable to a single classroom or to a national educational system, or to any other intermediate sub-system. The five evaluation types may be disaggregated if one wants to express more specific goals within any of the groups. For instance, input evaluation may be disaggregated into the following sub-types:

- teacher evaluation
- instructional materials evaluation
- course plans evaluation
- cost analysis.

The five evaluation types are not tied necessarily with a particular method or technique, even when some method or technique may be used more often for one given category. For instance, testing is typical of product evaluation, cost analysis is associated with input evaluation, and documentary analysis is more related to program evaluation; however, these techniques could be used in other evaluation contexts too. The essential difference among categories is in the use that is pre-established for the outcoming information, and this will determine also differences in the scientific design of the study, the sources of information and the way of reporting data.

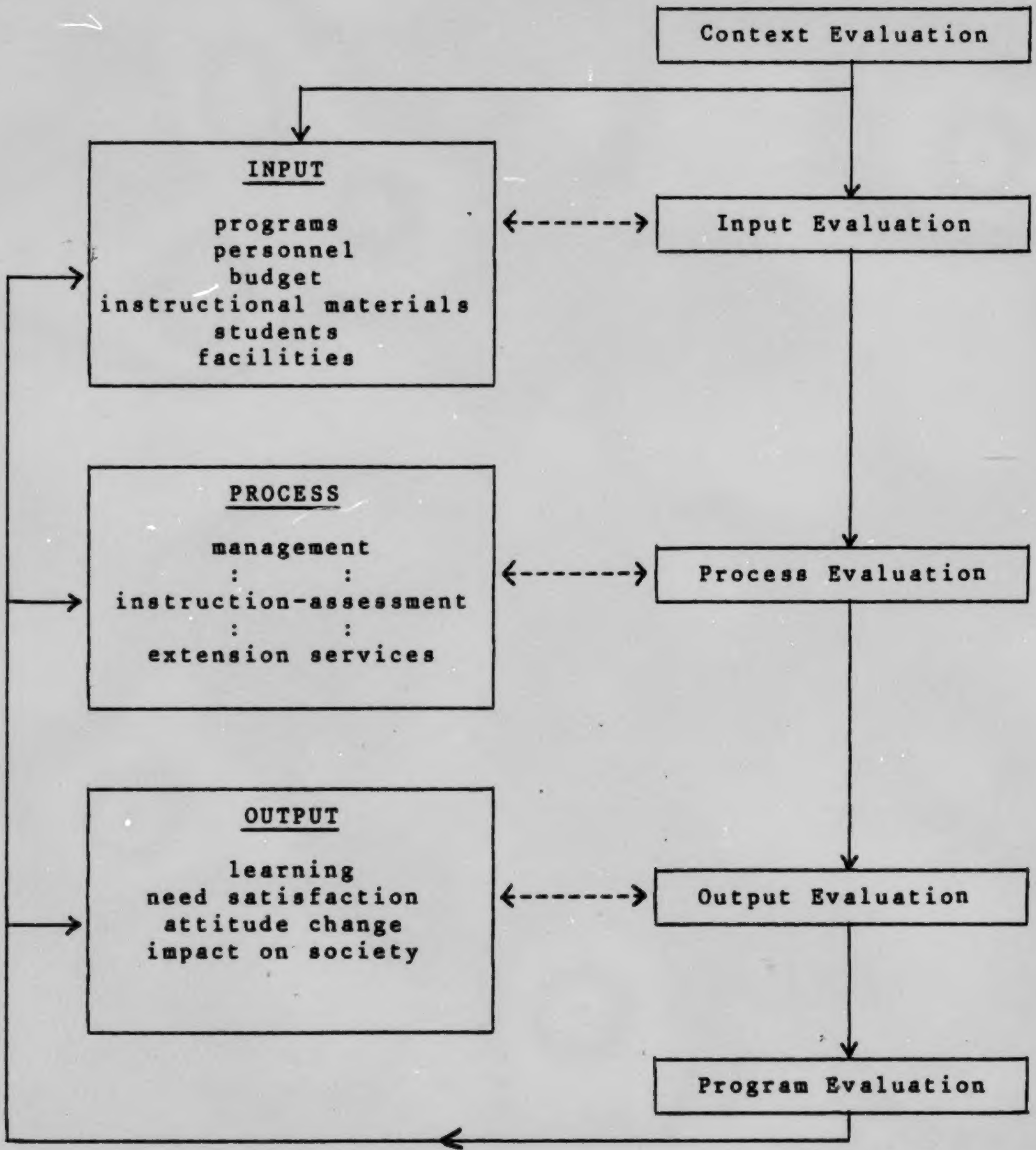
Context Evaluation
INPUT
programs
personnel
budget
instructional materials
students
facilities
Input Evaluation
PROCESS
management
instruction-assessment
extension services
Process Evaluation
OUTPUT
learning
need satisfaction
attitude change
impact on society
Output Evaluation
Program Evaluation

Figure 1. General Paradigm of Educational Systems and Sub-systems and the Evaluation Types

Institutional Context

Brief Characterization of UNA[10]

In order to place appropriately in context the design and methodology of the CES, it is convenient to state some characteristics of UNA which are relevant for the shaping of that model. These characteristics may be grouped into five topic areas, according to which is their referent: the instructional system, the functional areas, the organization and management, the curriculum or the student population. There are also some important characteristics that belong to the academic and administrative personnel, but these will be analyzed below, under the sub-section on the audiences.

Instructional System

It was already pointed out that UNA is based on distance and individualized instruction. Most of the courses are presented to the student as a package that usually includes the following: an individualized textbook (or a conventional textbook(s) plus an individualizing Study Guide), three or four presential exams that are offered to the student in scheduled opportunities, and some complementary programs in audio or video (usually one to four) that can be used in the facilities of the center. Some courses require special activities, such as: writing papers, realization and recording of field observations, design and execution of computer programs, laboratory practices, and so on. In those cases, a complete instructive for the activities is added to the materials, and if it is necessary, UNA provides the equipment.

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[10] Most of the information in this section is abstracted from two documents: UNA-Proyecto (Caracas: Universidad Nacional Abierta, 1977) and Modelo Operativo del Sistema UNA, Academic Vicerectorate (Caracas: Vice Rectorado Academico, 1980). When it is otherwise, the source is specified.

The instructional package is supposed to be self-sufficient, meaning that the student will not have to seek for external help. However, taking into account the differences in background of the students, and the need of using a human interface for some teaching activities (supervision of students, coordination of teamwork, assessment of papers and practical activities, etc.), there are academic advisors in each one of the local centers, that help the student with learning problems and do part of the assessment work. These advisors are specialized by area, i.e., Education, Engineering, Accounting, etc. The experience has shown that the students typically consult the advisors when they are in the lower levels of the curriculum but once they achieve some knowledge of the system the frequency of meetings drops down.

Student achievement is assessed on the basis of an objective-dominion system. For each course, a list of objectives is stated and the student has to show achievement of at least 60% of the objectives to pass. Once an objective is "earned," in a presential exam or another activity, the student has no obligation of being tested in it again. The last presential exam of a course (called Integral Exam) has the purpose of providing an extra opportunity to recuperate objectives that were not earned.

Functional Areas

In the educational system of UNA, six main functional areas may be distinguished: curriculum planning, design, production, development and evaluations. The relations among these are depicted in Figure 2.

The curriculum planning function is related to the structuring of career and course plans. This involves consideration of the complex interactions with the external environment, which is the ultimate receptor of the graduates from UNA.

The design function refers to the intellectual organization and elaboration of the teaching and assessment materials for the courses. These materials must be oriented toward individualized and distance learning. The materials alone do not make a course; for that reason the design phase must include also the definition of the appropriate learning conditions for the student--i.e.: amount of advisory hours required, type of institutions in which the student is expected to make observations, type of computer facilities required as a support for course work, etc.

The production function is closely related to the former, and usually it is partially overlapped to that one. It refers to the physical production of the learning materials, which involves editing, graphic arts work, printing--for the written materials--and different processes of media production for the audiovisual materials.

The development or implementation function involves the setting of all the elements and personnel which are necessary to deliver the courses to the students and provide them with the adequate support: advisory, library facilities, exam opportunities, use of laboratories,

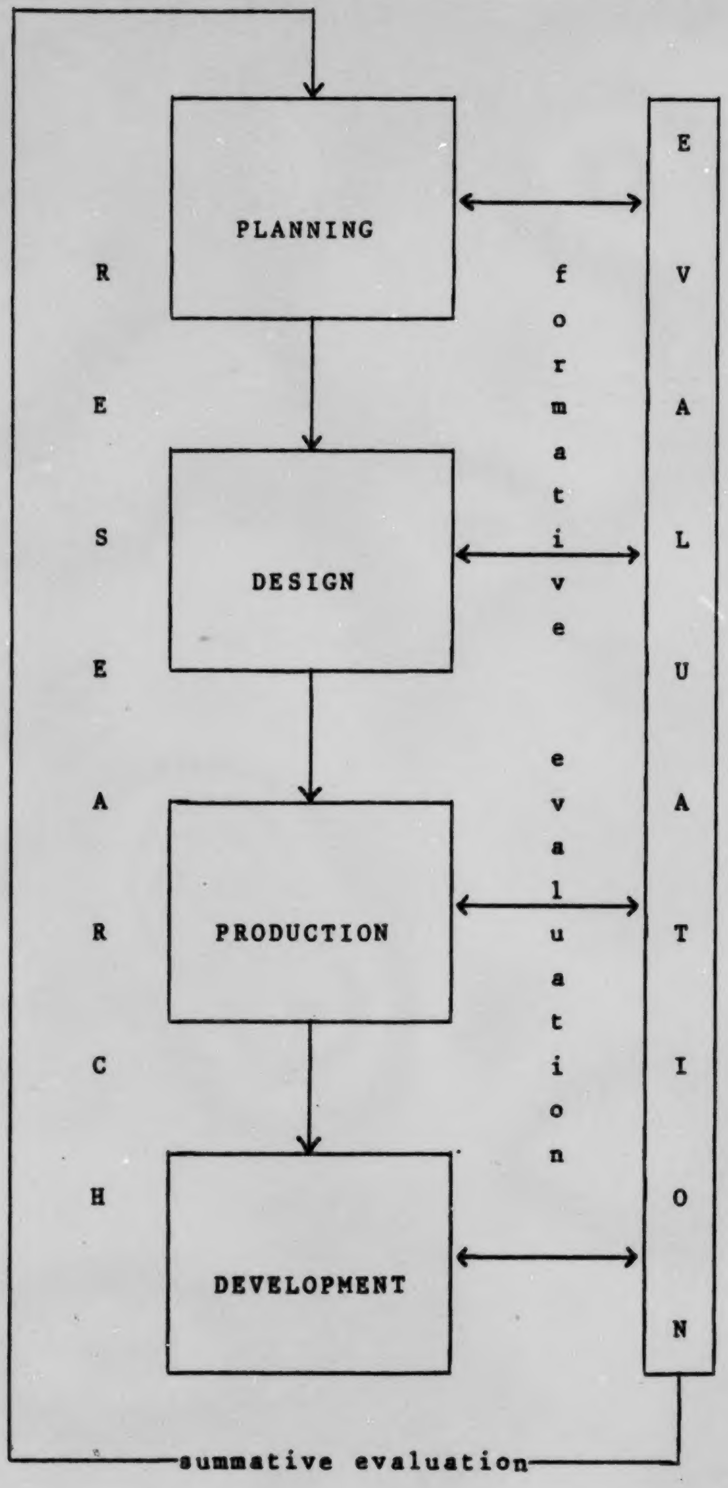
PLANNING
DESIGN
PRODUCTION
DEVELOPMENT
RESEARCH
formative evaluation
EVALUATION
summative evaluation

Figure 2. Functional Components of the UNA System

supervision during field experiences, etc. This function is decentralized to the Local Centers of UNA.

The evaluation function is the subject of this paper. As it was pointed out before, it is not now completely operating in UNA. It may be stated, as a tentative definition, that the general purpose of evaluation in UNA is to facilitate a sort of "quality control" in the system by providing information to decision-makers.

The research[11] function is supportive for the whole system. It provides analyses of scientific problems and issues related to the planning, design, production, implementation, or evaluation of the educational system. Some of the problems that have been studied are the following: characteristics of UNA students, effectiveness of audiovisual media, effectiveness of the Introductory Course, characteristics of the occupational areas corresponding to the career programs.

A closer view of the activities or operations involved in each of the five functions will help define more specifically the components of the evaluation system that is going to be proposed.

a. The planning function implies:

a.1 Assessments of needs in relation with the program areas--Administration, Education, Engineering and Mathematics--in order to provide goal statements for the curricula.

---

[11] Here we deal with the applied research function in UNA, which is now predominant. It is expected that in the future it will be performed some inquiries directed to knowledge in a broader sense, but they are not in the current priorities.

a.2 Occupational research, in order to determine the current and future profiles of the professions relevant to those programs.

a.3 Design of career curricula or programs.

a.4 Course planning

b. The design function implies:

b.1 Elaboration of individualized course text or study guide for conventional text.

b.2 Elaboration of assessment materials.

b.3 Design of scripts or guidelines for complementary media.

b.4 Design of the settings for learning conditions (installations, equipment, mode of interaction with advisors).

c. The production function implies:

c.1 Editing and printing textbooks or study guides.

c.2 Production of audiovisual materials.

c.3 Production of prototypes for experiential media.

d. The development function implies:

d.1 Selection and training of academic advisors or tutors.

d.2 Delivery of the course materials.

d.3 Realization of instructional helping activities as advisory and supervision.

d.4 Administration of assessment activities.

e. The research function implies:

e.1 Determination of needs and problems

e.2 Information search activities.

e.3 Reporting of research results.

All the activities mentioned as sub-sets of each function could be subjects to evaluation; however, certain limitations of time, resources and operational feasibility impose a narrowing of the set of activities that are going to be evaluated. In this proposal, only the following evaluation activities will be considered as priorities. Nevertheless, it is possible to further enlarge the model by including other evaluation activities.

d. The Evaluation function, then, will imply:

d.1 Evaluation of the Course Plans.

d.2 Formative evaluation of texts or guides during the process of design.

d.3 Field evaluation of texts or guides during implementation.

d.4 Formative evaluation of audiovisual media.

d.5 Survey of instructional settings.

d.6 Evaluation of academic advisors.

d.7 Evaluation of instructional process.

d.8 Evaluation of instructional products.

d.9 Summative or overall evaluation of program.

In essence, these nine components and their interrelations with the other function are the constituent parts of the Course Evaluation System (CES) of UNA.

Outline of UNA Structure

According to the concept of evaluation used in this paper, the purpose of the evaluation activity is "to provide information to interested parties," in order that they use it for determinate purposes: decision-making, backing proposed actions, present an image of the programs to external constituencies, etc. Then it becomes necessary, for a proper defintion of the CES model, that those "interested parties" are identified. One way to do this is to look at the structure of the organization and determine which strata or levels it possesses that are potential clientele for the evaluation system. Another way to do it is to survey the specific audiences that are interested in evaluative information, and find out which are their concerns.

In this study, both of the suggested ways for identifying the clientele for the evaluation system will be carried out. The reason is that each of themprovides a particular context for the evaluation system. On one hand, the macro vision of the system helps to identify the decision levels and how they are related to one another; this general picture provides guidelines for the orientation and scope of evaluative information in each one of the decision levels. On the other hand, the micro analysis of the requirements of the specific audiences and their concerns helps to identify purposes, content and criteria for the evaluative information. Keeping these principles in mind, this section of the paper will discuss the decision levels in UNA, and the next section will analyze the specific audiences.

Following a classicial differentiation of management levels of the organizational theories,[12] the structure of UNA can be graded into four decision-making levels. The higher a level is, the more it will have an influence on the overall development of the organization; conversely, the lower a level is, the more it will deal with particular aspects of the organization and specific information. The four levels, the type of decisions they deal with, and their scope of influence are summarized as follows:

First Decision Level: Overall Management and Strategic Planning.

Decisions at this level tend to be oriented toward planning the whole institutional development and establishing policies for the allocation of resources. Examples of this type of decision are: defining goals for the university curricula, determining the offering of academic programs, defining the global budget, approving of the opening or termination of course programs, determining rules for contracting personnel, approving of contracts with external constituencies, setting the academic schedule. Most of these decisions affect the overall development of programs in UNA.

Second Decision Level: Mid-Management and Tactic Planning.

This is the program coordination level. Here decisions are concerned with program planning, allocation of resources, and control of program execution. Common types of decisions at this level are the following: determining the goals of a project, defining the roles of personnel, assigning tasks for departments and units, performing periodical control of program development, and budgetary planning. These types of decisions affect primarily the department or unit to which they are applied; subsequently, they may affect other units that are functionally connected.

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[12] A syntetic description of this categorization is found in Davis, George, Management Information Systems, (New York: McGraw-Hill, 1979, Chapter 11).

Third Decision Level: Supervisory and Operational Planning.

This level deals with the coordination of the tasks involved in projects or programs. Decisions are concerned with short-term planning, program implementation and on-going control of program execution. Typical decision setting are the following: set specific objectives and timing for tasks, direct the execution of a task, coordinate working teams, evaluate products and order corrective actions.

Fourth Decision Level: Operational Level.

This is the task-execution level. Here, decisions have to be made continuously in relation to how to utilize work and given resources to accomplish the objectives. The content of decisions varies according to the dominant functions of the unit: administrative, academic, student services, production of instructional materials, teaching, etc.

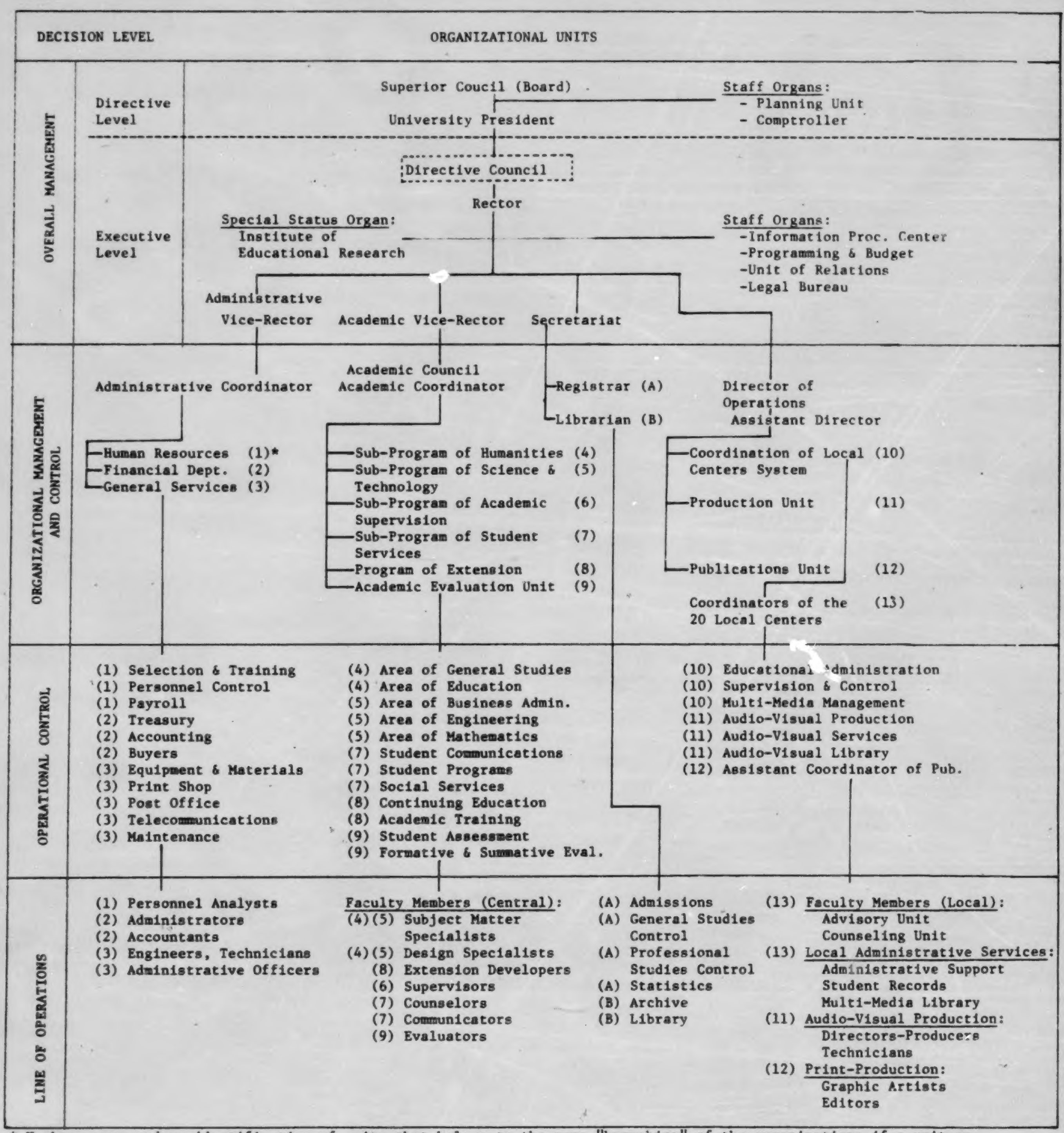
This classification of decision levels must not be considered as definitive. It is only an orientation for identifying evaluation and information needs in each level. In addition, the limits among the levels neither are clear-cut. It may happen--and usually happens--that a person or group in an upper level makes a very particular decision, or--conversely--a person in a lower level makes a decision that affects considerably several units of the system. The following are examples of both situations: a) the Directive Council of UNA decides to change the person in charge of a role; b) a team of course developers decides to adopt a form of assessment involving direct interaction with computer, that places new requirements on the implementing units. However, if the total institution is considered over a long span of time, decisions will tend to follow the four-level pattern described above.

In Table 2 the units of UNA structure are presented according to the decision-level model above. References to that table will be found in this paper when it is necessary to touch on any of the component units. A complete description of the units and their relations is beyond the scope of this paper. However, it is convenient, at least, to relate the functional areas of the system to the components of the structure. This is intended in Table 3.

Audiences for the Evaluation System

Even when the evaluative information is aimed specifically at improving the efficiency and effectiveness of an institutional system as a whole, there are certain groups in the institution that, because of their roles, will be more interested in evaluation results and more responsive to use that kind of information. These interested audiences must be taken into account when designing the evaluation system.

TABLE 2: OUTLINE OF THE ORGANIZATIONAL STRUCTURE OF UNA


DECISION LEVEL
ORGANIZATIONAL UNITS
OVERALL MANAGEMENT
Directive Level
Superior Coucil (Board)
University President
Staff Organs:
- Planning Unit
- Comptroller
Directive Council
Rector
Executive Level
Special Status Organ:
Institute of Educational Research
Staff Organs:
-Information Proc. Center
-Programming & Budget
-Unit of Relations
-Legal Bureau
Administrative Vice-Rector
Academic Vice-Rector
Secretariat
ORGANIZATIONAL MANAGEMENT AND CONTROL
Administrative Coordinator
Academic Council
Academic Coordinator
Registrar (A)
Librarian (B)
Director of Operations
Assistant Director
Human Resources (1)*
Financial Dept. (2)
General Services (3)
Sub-Program of Humanities (4)
Sub-Program of Science & Technology (5)
Sub-Program of Academic Supervision (6)
Sub-Program of Student Services (7)
Program of Extension (8)
Academic Evaluation Unit (9)
Coordination of Local Centers System (10)
Production Unit (11)
Publications Unit (12)
Coordinators of the 20 Local Centers (13)
OPERATIONAL CONTROL
(1) Selection & Training
(1) Personnel Control
(1) Payroll
(2) Treasury
(2) Accounting
(2) Buyers
(3) Equipment & Materials
(3) Print Shop
(3) Post Office
(3) Telecommunications
(3) Maintenance
(4) Area of General Studies
(4) Area of Education
(5) Area of Business Admin.
(5) Area of Engineering
(5) Area of Mathematics
(7) Student Communications
(7) Student Programs
(7) Social Services
(8) Continuing Education
(8) Academic Training
(9) Student Assessment
(9) Formative & Summative Eval.
(10) Educational Administration
(10) Supervision & Control
(10) Multi-Media Management
(11) Audio-Visual Production
(11) Audio-Visual Services
(11) Audio-Visual Library
(12) Assistant Coordinator of Pub.
LINE OF OPERATIONS
(1) Personnel Analysts
(2) Administrators
(2) Accountants
(3) Engineers, Technicians
(3) Administrative Officers
Faculty Members (Central):
(4)(5) Subject Matter Specialists
(4)(5) Design Specialists
(8) Extension Developers
(6) Supervisors
(7) Counselors
(7) Communicators
(9) Evaluators
(A) Admissions
(A) General Studies Control
(A) Professional Studies Control
(A) Statistics
(B) Archive
(B) Library
(13) Faculty Members (Local):
Advisory Unit
Counseling Unit
(13) Local Administrative Services:
Administrative Support
Student Records
Multi-Media Library
(11) Audio-Visual Production:
Directors-Producers
Technicians
(12) Print-Production:
Graphic Artists
Editors

* Numbers are used as identification of units that belong to the same "branching" of the organization; if a unit or charge in a lower level has the same number as one in a higher level, it means that the former "belongs" or is a part of the latter.

TABLE 3

RELATIONS BETWEEN THE FUNCTIONAL AREAS OF THE SYSTEM AND THE STRUCTURAL COMPONENTS

FUNCTION	RESPONSIBILITY IN THE STRUCTURE
CURRICULUM PLANNING	Sub-Programs of Humanities, and Sciences & Technology with their respective areas. They are under the Academic Vicerectorate. The Institute of Research gives support with the Occupational Research inputs.
DESIGN	Academic Areas: General Studies, Education, Business and Administration, Engineering, Mathematics. The Academic Evaluation Unit gives support in the development of the assessment materials.
PRODUCTION	Production Unit and Publications Unit. They are under the Director of Operations.
DEVELOPMENT	Coordination of Local Center System and the personnel of the 20 Local Centers. All this sub-structure is under the Director of Operations.
EVALUATION	It is centralized in the Academic Evaluation Unit, but the Academic Areas and the Centers do most of the execution part.
RESEARCH	Institute of Educational Research.

Wright and Hess[13] have identified five types of audiences that usually deal with the information coming from the evaluation of educational programs and products. These groups are the following:

- Sponsors: those who provide financial resources.
- Institutional management: officers and officials that coordinate and control the development of programs.
- Developers: staff directors who have in charge the planning and execution of the instructional projects.
- Consumer representatives: those who will use the instructional product or will be affected by it.
- Representatives of the professions: Advisory groups comprised of prominent individuals in the disciplines related to the programs.

With some restrictions this classification could be applicable to UNA. These restrictions are due to differences between the institutional traits of the organizations analyzed by Wright and Hess and those of the Venezuelan universities, particularly of UNA. The main differences may be briefed as follows:

- Venezuelan Universities[14] with the exception of a few private universities, are sponsored by the National Ministry of

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[13] Wright, William and Hess, Robert. A Criteria Acquisition Model for Educational Product Evaluation, in Evaluating Educational Programs and Products (Gary Borich (ed), Englewood Cliffs: ETP Publications, 1974, pages 155 to 156).

[14] There are three major groups of Universities in Venezuela:

a. Autonomous Universities: These were created by the Government, and have a special status according to which they administer by themselves, elect their authorities by ballot and have complete freedom in the selection of programs to execute.

Education. This entity uses several ways, usually not systematic, to appraise the accountability of those institutions. With that purpose, the National Council of Universities was created, which is the maximum policy and planning organ for Higher Education in Venezuela. This corps is formed by the Minster of Education--who presides over it--, the University Rectors, and delegates of other institutions. This means that the reporting of the overall activities of the institution for purposes of planning, accreditation, surveillance, or other, usually goes to the National Council of Universities.

- In UNA, the so-called "representatives of the professions" do not form a separate audience by themselves. There are some people working with UNA to whom this qualification might be applied, but they are members as technical advisors, of the course development teams.

14(cont.)

b. Non-Autonomous Universities (they are stated as "experimental"): these are created also by the Government but have some form of direct liaison with the Ministry of Education. UNA belongs to this group. In its case, the maximum authorities are appointed by the Minister of Education and also some of the members of the Superior Council.

c. Private-Owned Universities: these are created by private groups and have to be authorized by the Ministry of Education. They have one delgate in the National Council of Universities.

Taking these two considerations into account, it may be stated that the audiences most immediately related to the evaluation system are the following:

Authorites and High Level Representatives
Course Development Teams
Institutional Managers
Academic Advisors at the Local Centers
Actual and Potential Users.

In the category of Authorities and High Level Representatives are included the University President, the other members of the Superior Council, and the members of the Directive Council, which are the Rector, the Vice-Rectors and the Secretariat. It may be also mentioned the National Council of Universities and the Ministry of Education, whenever UNA has to report to that entity. The major interest of this group are in the identification of educational goals for the institution, the general surveillance of the design and development of programs in order to ensure the efficiency of the activities and the desired impact in the users and related audiences.

The Course Development Teams are multidisciplinary groups, which design, product and follow up the distance courses of UNA. They are responsible for the instructional quality of the materials. Usually, those teams--called "Unidades Integradas de Diseño"--are formed by subject-matter specialists, a curriculum designer, an evaluator, a media producer and one or more technical advisors in the subject-matter area. Their concern with evaluation is primarily to improve the quality of the course--objectives, materials, assessment--on the basis of feedback information from experts, course users and students.

The Institutional Managers category includes most of the heads of the units listed in Table 2 in the two central blocks, meaning the "Organizational Management and Control" and "Operational Control" levels. However, the mid-managers that belong to the Administrative Vice-Rectorate are not an audience particularly interested in course evaluation results, because they carry out specifically a kind of supportive business-like administration.

The major concerns of the Institutional Managers is to ensure that that different phases of projects and/or programs are accomplished according to certain standards of quality, and with efficiency in respect to the use of resources. They try to assure that the work undertaken is in accord with the established compromises and missions of the institution.

The Academic Advisors of the Local Centers is the largest group, which is formed by subject-matter specialists and guidance specialists who are in daily contact with the students. Their function is to help accomplish the curriculum objectives by tutoring the students, supervising them in interactive-learning situations (i.e., laboratory, workshops) and contributing to their assessment by marking some activities that cannot be appraised at a distance. This audience is interested in evaluative information that helps them to know better the levels of performance of the students under their charge, and also the strengths and weaknesses of the course materials, in order to plan accordingly the advisory activities for better results.

The Actual and Potential Users, are the current students of UNA, and those who are planning to enter or belong to the type of population most interested in distance instruction.[15] They want to know some data that makes them sure of the quality of the courses--frequently in comparison with those of other universities--and also they want to identify what potential problems they may have with the materials or the requirements. Actual students are, of course, very much interested in feedback from the learning assessment procedures, but this point will not be considered in depth in this paper, which deals primarily with course evaluation.

The Evaluation "Hypotheses"

Goals

The development of a social or educational program, as Rossi[16] and other authors point out, is based on explicit or implicit causal assumptions that define the relationships between program inputs (resources, efforts) and program outcomes. These assumptions may be thought of as assuming this general paradigm form: "If intervention 'A' is done (an application of resources and effort with determinate goals), then result 'B' is expected to occur (an increment in some variables, a social change, an improvement of certain conditions).

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[15] The Institute of Educational Research, Perfil del Estudiante UNA (Profile of UNA Student), Caracas: brochure for internal distribution, 1980 and 1981), has determined some major characteristics of the student population of UNA: over 21 years old, usually married and working, some previous experience with higher education, wishful of upward mobility.

[16] Rossi, Peter H., et al., Evaluation: A Systematic Approach (Beverly Hills: Sage Publications, 1979) point out that such kind of programs are based in implicit or explicit intervention models that are "an attempt to translate theoretical notions regarding the regulation, modification, and control of social behavior or community conditions into hypotheses on which an action can be based," p. 66.

When these assumptions are precisely formulated as hypotheses, and they are supported by an appropriate theoretical framework, then they form an intervention model which is the underlying construct for the planning and implementation functions in the program. Rossi[17] summarizes clearly the requirements of such a model: "The impact model must include a statement concerning the stimulus or input, a hypothesis about what changes the input will produce, and a theory or proposition about how that change will affect the behavior or condition the policymaker is seeking to modify."

The absence of an explicit intervention model in a program darkens the making of decisions during implementation, and it is also a serious impairment when it becomes necessary to evaluate the effectiveness and accountability of the program. For that reason, it will be intended in this paper a clarification of the general assumptions or "hypotheses" on which is based the educational system of UNA, and each one of its programs. The resulting set of "hypotheses" will serve as topics of inquiry for the evaluation system.

The primary sources for elucidating the Intervention Model of UNA are the constitutive Project[18] and the Curricula.[19] The Project defines the general goals of the institution and the strategies for achieving those goals, and the Curricula defines the theoretical framework for the instructional processes and the structure of the career programs. These two documents allow one to define three kinds of outcomes that UNA is due to achieve, in the long, mid and short term, respectively. These classes of outcomes may be stated as follows:

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[17] Rossi, Peter H. (Op. Cit., page 67). Impact and Intervention Model are equivalent terms in this work.

[18] Comisión Organizadora de la UNA, Universidad Nacional Abierta-Proyecto (Caracas: UNA Publications, 1977).

[19] Vice-Rectorado Académico, Curricula de las Carreras de la UNA (Caracas: UNA, internal mimeo, 1978). This document explains a theoretical framework for the distance teaching system of UNA and for the competency based curriculum, which is the central idea for curriculum organization in UNA. In a second part, each one of the syllabi for the career programs is defined.

a) In the long-term span of time there are Institutional Goals, representing the changes that UNA, as a social institution, is meant to introduce in Venezuelan Society and, in particular, in the Higher Education Sub-System. These goals may be thoroughly evaluated only after a period of 8 to 10 years of operation, because it is required for that purpose that the program is completely settled, and that a considerable offspring of graduates is distributed in social institutions. However, in the meantime a lot of evaluative information concerning the Institutional Goals must be accumulated in order to make possible a general appraisal in the future.

b) In the mid-term span, there are Curricular or Program Goals, represented in the permanent knowledge and ability changes that the career programs are supposed to arise in students. A complete evaluation of these changes will requires at leat a period of 3 to 5 years, according to the minimum duration of each one of the career programs (See Table 1). Most of the students will not graduate in such a minimum lapse because they have concurrent work compromises, and also the attrition and repeat rates will have a restraining influence. In general, a period of 5 to 8 years may be established as the periodic frequency for the global evaluation of the curriculum goals. Additionally, the accomplishment of those goals must be matched always with the technical and societal changes in the environment, in order to know if the accomplishment of goals really was "on target" with the needs it was supposed to meet. However, as the curriculum goals are *sequential* in nature, in the sense that they have been progressively constructed through the accumulation of sequential changes, it is possible to evaluate year by year the attainment by the students of the desired behavioral changes according to their expected graduate profiles. Consequently, those profiles must be matched with the environmental changes, in order to know if they are still relevant for the external needs.

c) In the short-term span, there are *Instructional Goals* or objectives, referred to the specific learning changes that are expected to occur in each course group as a result of the learning materials and the instructional procedures. These changes may be stated as knowledge, attitudes and ability modifications.

The short-term goals may be appraised in periods that range from 1 to 7 months, which is roughly the lapse for a course cycle in UNA. During this lapse, a student may have up to four opportunities to take exams, and in each one of them the amount of change can be measured.

The three levels of outcomes that have been mentioned are internally related: instructional goals must lead to curricular goals, and these must lead to institutional goals. This means that the evaluative information of CES must be cumulative: the data gathered in a particular evaluation procedure have to be delineated in such form that they can be used in the future for an institutional evaluation. This is an important principle that has to be considered in the design of the system for information access and retrieval that would support the CES.

It may be observed too, that the three levels of goals are related with the levels of decision-making analyzed in a previous section: Institutional Goals are mainly a concern for the Overall Management Level, Curricular Goals are interesting minaly for the Organizational Management and some members of the Operational Control Level (i.e, the Coordinators of Academic Areas), and Instructional Goals are the main conern of the Operational Control and the Line of Operations. This distinction is useful also for the design of the information net to supoort the evaluation system.

In the following discussion, an attempt will be made for defining the evaluation "hypotheses" for each one of the goal levels. The word is framed in quotation marks to indicate that these are not formalized research hypotheses, but guiding assumptions or on-the-work hypotheses that will allow for an orientation of the evaluative inquiry. It will be possible in the future, to make a detailed analysis of UNA inputs, transformation processes and outcomes, in order to derive true scientific hypotheses.

Hypotheses

Hypotheses Related to the Institutional Outcomes

The UNA Project states that this University was created in concordance with the general goals for Venezuelan Education, as formulated in the Fifth Plan of the Nation (1976-1980).[20] These goals are:

- Democratization: extension of the access to education for all the population strata, particularly the underprivileged classes.
- Autonomous Development: prepare human resources required in priority areas for the economic and social development, and reducing the dependency of foreign technology.
- Innovation of the Educational System: this goal refers to the enhancement of instructional quality via the introduction of innovative theories, methodologies and media. These will allow for a better output of learning and a broader coverage.[21]

In addition to these goals, three developmental principles are formulated, as a general orientation for the organization of the institution. These are:

- The Instrumental Approach, evaluated through the criterion of Efficacy or goal achievement.

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[20] Comision Organizadora de la UNA, Proyecto (Op. Cit., page 19).

[21] This goal has to be clearly understood in the context of Venezuelan Education, which is highly traditional: an absolute predominion of the expositive class as a method, emphasis in rote learning, assessment based in content and not in objectives, and so on.

- The Economic Approach, evaluated through the criterion of Efficiency or cost optimization.
- The Social Approach, evaluated through the criterion of Pertinency or congruence with environmental needs.

On the basis of these goals and developmental criteria, the following general hypothesis may be stated:

General Hypothesis for Institutional Outcomes:

(Input Variables) It is expected that UNA, as an institution that is characterized by:

a) National Coverage
b) Distance Education
c) Open Access
d) Multimedia and Individualized Teaching
e) Complementary In-Service Instruction
f) Competency-Based Curricula

(Process Variables) And operates the following kinds of programs:

a) Professional careers in Administration, Education, Engineering, and Mathematics
b) Continuing Education Courses in the same Areas
c) Cultural Extension
d) Supportive Courses for Students of Other Universities (i.e., General Education)

(Outcome Variables) Will be able to produce a positive effect on the:

a) Democratization of Education, by increasing mass education and lowering the costs per student.
b) Innovation of the Educational System, by improving the quality of instruction with new methods and media.
c) Creation of Human Resources for Autonomous Development, by forming personnel in critical need areas and promoting the integration of students to work through in-service instruction.

This general hypothesis has to be disassembled in many more specific propositions in order to be tested.

Hypothesis Related to Curriculum Outcomes

As it was discussed in the first part of the Introduction (See Table 1), UNA is currently offering ten curriculm programs in four areas. These are summarized as follows:

Area Education	Pre-School Education Technician Learning Difficulties Technician Mathematical Education Licency
Area Business and Administration	Business Administration Licency Public Administration Licency Public Accountancy
Area Engineering	Industrial Engineering Systems Engineering
Area Mathematics	Applied Statistics Licency Applied Calculus Licency

Each one of the curricula was built on the basis of an analysis of projections for the demand of human resources, and an occupational study aimed to determine the profile of the most common jobs associated with the particular program.

With the above quoted information as input, teams formed by professors from several Venezuelan universities and representatives of the professions, aided by curriculum specialists, chose sets of courses and determined objectives and content for them.

In the process of selecting the courses, all the teams were advised to apply a specific policy that the developers of UNA wanted to pursue ahead. They thought that university education cannot be fosued only in professionalization, but that the student has to develop also certain general capabilities, which are relatively indepent of subject matter content, being transferable to many work and life situations. They grouped these abilities in three categories:

- Rational thinking: methods of inquiry, formalization of observations, use of logical and mathematical models of processes, validation of judgment, adequate use of language.
- Creative thinking: problem-solving strategies, production of original communications, ability to generate alterantives on given issues, recognition of scientific problems.
- Critical thinking: ubication of human phenomena in the social context in which they are produced, analysis of social motivations and attitudes, distinction between scientific and ideologic reasoning, recognition of social, cultural and economic determinants of social behavior.

These modalities of thinking are present in almost any discipline, but there is not any guanrantee that they will be developed adequately in a curriculum, when it is oriented only to professionalization. Therefore, on the basis of this rationale--which is shared by many other higher education institutions in Venezuela--the curriculm designers included a General Studies Component. This constitutes a kind of "core" curriculum for all the programs in UNA, and it is formed by courses such as: Basic Mathematics, Communication and Language, Research Methods, Foundations of Social Development, Science & Technology, etc.

The interactionof all those criteria that were considered in the design of the curricul originated a kind of mixed product. Consequently, a typical UNA program has the following components:[22]

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[22] Currently, the programs are uniform for all the regions in which UNA has Local Centers. This is due mainly to economic reasons, because it will be costly to develop "tailored" materials for each region. One of the advantages of the CES will be to analyze if the programs have similar effects in each region or not, and if they meet needs equally.

1. General Studies Courses
2. Foundation or Courses for the Area
3. Specific Professional Courses for the Program
4. In-Service Instruction (Practicums or Internships)
5. Degree Projects.

The sequence in which the requirements of each one of those components is taken by the students varies highly among them, however, the pre-requisite system, which is highly compulsory, requires the students to roughly follow the general pattern presented above. The following table summarizes the input and output variables for the "hypothesis" related with UNA curriculum. The process transactions have to be determined for each pair of input-output variables.

General Hypothesis for Curriculum Outcomes:

Input Variables	Process	Output Variables
Curriculum, design and courses, which have the following characteristics:	These characteristics of curricula are supposed to influence student learning in a permanent form, and produce determinate knowledge, ability and skill profile as output.	Improved results in measurement scores of the following traits:
a) Based on professional competencies		a) Knowledge and abilities related to the profession.
b) Focused on the development of cognitive abilities		b) General thinking abilities.
c) Reinforced by In-Service Instruction		c) Job skills, as learned in In-Service Instruction.
d) A particular pattern of sequence that the student has to follow.		

Hypothesis Related to Instructional Outcomes

UNA is applying an instructional model that for the first time is used at large scale in Venezuela. This model is based in the principles of individualized learning, according to which the student self-manages his learning at his own pace. The educative institution offers the learning materials and services--academic, advisory, library, audio-visual, labs, etc.--which may be used at will. Assessment activites are scheduled in such form that the student has several options for accomplishment.

The Individualized Learning Model has been successfully applied in other countries--i.e., The British Open University, the University of Mid-America, the Fern Universität in Germany--but it does not mean that it will be automatically successful in Venezuela. Each country and region has specific characteristics of student population, teachers, instructional media available, and so forth. The "Open" model then must be adapted to the particular social context on the basis of formative and summative evaluation of programs.

The resources or input variables used in the Individualized Learning Model of the UNA are the following:

a) Written Materials

This is considered to be the "master medium," because it gives the pace and organization for the other media. There are two main formats: a special individualized textbook that fulfills practically all the reading requirements for a course, or a study guide that has to be use in complement with other texts and sources. In any of these cases--the individualized text or the guide--the written material will be provided with the following traits:

- learning objectives clearly stated for each unit or lesson.
- content has to be arranged in sequenced units or lessons of short duration; sequencing is logical and pedagogical.
- each unit has a self-evaluation activity.
- feedback on self-evaluation is provided.
- instructions for the use of other media are given.

b) Audio-Visual or Experiential (kits) Materials

They are produced by UNA or adapted from already available resources. The most important characteristics enforced in those media are the following:

- complementarity to the written material.
- provide substitutes to lab or field experiences.
- motivational character.

c) Academic Advisory and Counseling

In each learning center the students may, but are not required to, consult subject matter advisors for clarification or supervision of study. There are also available guidance counselors for helping with learning problems. Advisors and counselors enforce the establishment of study groups among students.

d) In-Service Training Projects[23]

This name is applied to work projects in public or private institutions. These projects are run in specific moments of the evolution of a student in his/her career. The general purpose is to provide a direct experience of work abilities and skills. These activities are characterized by the following:

- They are based on real work competencies.
- They are supervised and guided both by UNA and the receiving institution personnel.
- Activities are sequenced according to complexity.

e) Assessment Activities

The assessment instruments are designed in the central headquarters of UNA to assure uniformity. Several forms of assessment may be used: multiple-choice, essay tests, paper projects, research projects, practical evaluations, etc. Relevant characteristics of Assessment Activities are the following:

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[23] The in-service training projects are not in application by the time this paper is written, it is expected that it will be necessary to adapt the project to each one of the regions. This claims for a decentralized administration. It is anticipated also that some projects will not be developed in some regions, because a shortage of institutions or students. In such cases UNA will have to provide substitute activities, or transportation and homing facilities for students that have to travel to develop their projects.

- They are based in behavioral objectives.
- They are cumulative: an objective won is not examined again.
- Feedback about results is provided to students.
- There are several opportunities for each exam or task. If the student fails in one, he may try once more.
- Assessment questions have affinity (but are not equal) with the self-evaluation questions.

It may be seen that the instructional components in UNA try to incorporate several important principles of teaching and learning that have been determined through research studies. One of the objectives of the evaluation system will be to validate the application of those principles.

General Hypothesis for Instructional Outcomes

Input Variables	Process	Output Variables
Components of the Instructional model with the characteristics described above. a) Written materials b) A-V and Experiential Media c) Academic Advisory and Counseling d) In-Service Training e) Assessment Activities	Student utilization of learning components and services	a) High achievement of objectives b) Student satisfaction c) Improvement in abilities d) Competency in work-related behavior e) Optimum use of time by students f) Low drop-out rate

The general hypotheses that have been formulated provide the essential framework for formulating testable hypotheses for specific evaluation studies. When the evaluators come to it, they will have to analyze the sub-components and operational indicators of the variables that have been defined here in a very rough form.

The Course Evaluation System described in this proposal deals primarily with the Instructional Outcomes, and some concern will be given to Curricular Outcomes. The evaluation of the Institutional Outcomes requres different approaches, because they refer to very slow and macroscopic changes. It is necessary to develop a specific methodology to retrieve relevant information for this purpose.

A particular feature of the presented "hypotheses" must be stressed here: when they are examined, the evaluation questions should be addressed not only to determine if the input variables (independent variables) have the assumed influence on the outcome variables (dependent variables); it is necessary also to determine if the input variables have the expected characteristics or quality, and if the transaction processes are really occurring as it was anticipated. In other words, it is required to do not only product evaluation, but also input and process evaluation of those hypotheses.

Organization of this Study

One general idea underlying this paper is that evaluation, for being really effective, must be carried out in a systematic way. It means that the producers for evaluation and reporting evaluative information have to be clearly structured and applied on a regular basis. These requirements may not be essential for the evaluation of a small program--i.e., a workshop--, but in the case of an instutition like UNA, with so many interactions among its functional units, the need for systematization is overwhelming.

For that reason, this paper will try to delineate a global system for the evaluation of courses in UNA. This system will be outlined in its major components, and adapted to the current state of development of the institution.

Two kinds of major conditions will be imposed for the design of this model. First of all, make it conceptually *valid*; in other words, it has to be soundly supported in the principles corresponding to the current practice of evaluation. Secondly, the model has to be *feasible*; meaning that it has to be adapted to the current organization and resources of UNA. Perhaps a third condition should be that the model can be *evolved* according to the development of the institution, this means that the model must be open and flexible to change. However, this last point depends largely on the people who develop it.

The presentation of the Course Evaluation System will be depicted in two stages. In Chapter II a review of the literature on the two major rationales for the model will be discussed. In the first place, the context for the upbringing of UNA in Venezuelan Higher Education will be studied. The analysis of the factual or historic determinants of that new instutition provides a series of guidelines about what is expected from it, and the evaluation model--if it is projected to be feasible--has to be tailored according to those expectations. In the second place, a review will be done of the concepts and principles of evaluation that serve as technical support for the model. These ideas will be traced back in theirevolution in the discipline of educational evaluation.

Chapter III will present the core of the model, by discussing the conceptual design, and describing the evaluation stages, their criteria, and their procesures. This part will be rendered in prescription-like form, because its purpose is to give orientations for actual practice.

Also discussed there will be the necessary chain link for all sensitive and responsive evaluation: the information side. This is related to a series of issues about how to organize, retrieve and report the evaluative information in order to make it really effective for change.

Finally, in the same chapter I will present a summary of the ideas of the paper, and the basis for the program development of the model, as if it were actually to be carried into practice. This includes an analysis of the obstacles that may be found, the recommendations to facilitate the implementation, and a checklist of symptoms of good or bad operation of the model.

In the Appendixes are shown samples of the would-be instruments for the implementation of the evauation activites. These instruments must not be considered as the final ones, because a process of teamwork and pilot trials is necessary in order to determine their weaknesses, enrich them and--finally--put them into print.

CHAPTER II

REVIEW OF THE LITERATURE

The Open University in the Context of Higher Education in Venezuela

Historic Development

Higher Education in Venezuela has been a rather enduring enterprise, since the first University was established in Caracas by the Spaniards in 1721.[24] However, in spite of its antique origin, it cannot be said that universities and colleges had a graded development. Instead of that, there was a very slow growth from the 1700s to 1950, and then a sudden burst from 1958 to the present. Therefore, as an updated view it can be stated that Higher Education in Venezuela is mostly a new enterprise. It is convenient to analyze the underlying events that gave origin to this apparent paradox.

From 1721 to 1821 the University in Venezuela was an institution for the Spaniards and for some privileged minorities. After that, even when the domination of Spain was obliterated in 1821 with the Independence War, the situation did not change much because the University continued to be as a fief for the underprivileged. Since that time, a series of more or less autocratic governments succeeded until the entrace of the twentieth century.

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[24] Drayer and Castillo, La Educación Superior en Venezuela, Papeles Universitarios (Caracas: Year 4, 22, 1981, page 107). The first University was appointed Royal University of Caracas, and became after the Independence War the "Universidad Central de Venezuela." In its early years the University of Caracas was an institution closely tied to the power of the Catholic Church, and was ruled by it.

The second university of Venezuela was created in Merida in 1810, and it followed the tradition of the University of Caracas.

Near the turn of the century, as a consequence of the secularization of education and of important social movements--including a Civil War--the universities initiated a slow process of modernization, and all of them began to increase their student population with a considerable input from the middle classes. By 1890 two new universities were created in Valencia and Maracaibo.

The first half of the 1900s was characterized by very strong dictatorships, particularly the 27 year rule of Juan Vicente Gomez, and the transformation of universities into centers of political opposition by new politicians coming from the middle classes. There were some attempts to install democratically-elected governments, but these were interrupted by military coups.

In 1958 the country finally gained a steady state of democratic life, that has endured to the present through a succession of five freely elected administrations. These have given an extraordinary impetus to the opening of access to education, and particularly to higher education. This rapid growth can be easily appreciated by comparing the following data:[25]

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[25] This data has been abstracted from a series of statistical information presented by the National Council of Universities, as a source for planning: Consejo Nacional de Universidades, "Informacion Basica sobre algunas variables importantes en Educacion Superior" (Caracas: Papeles Universitarios, Year 3, n. 20, 1980).

a) In 1958 there were in Venezuela the following Higher Education Institutions:

4 National State Universities
2 Private Universities
1 Pedagogical Institute

In 1981, there are the following:

13 National State Universities
6 Private Universities
6 Pedagogical Institutes
4 Universitary Polytechnics
13 Technological Universitary Institutes
7 National Colleges
5 Private Colleges
4 Military Universitary Institutes
1 Universitary Religious Institute
13 Private Universitary Institutes

b) In 1958 the global student population of Higher Education in Venezuela was 16,795 students, which represented less than 3% of the young people between 18 and 24 years old. In 1981 the estimated student enrollment in Higher Education institutions is 334,078 students, which represents 13.87% of the age group 18 to 24.

c) For 1964, the global budget assigned to Higher Education by the National Government was 194.9 million bolivars (U.S. $45.3 million,)[26] which represents 2.6% of the National Budget. For 1980, the assignment for Higher Education was 3,521.8 million bolivars (U.S. $819 million), which represents 4% of the National Budget.

Appraisal of the Current State

All the later information shows a very rapid growth of Higher Education in a span of 24 years. This, of course, has advantages and disadvantages. As advantages, the enlargement of access to post-secondary education, the diversification of opportunities for the student, and the creation of more programs according to the needs of national development can be counted. The disadvantages deserve a more detailed analysis, because they are likely to impose demands on the evaluation systems, in order that these provide useful information for the improvement of performance.

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[26] Budget data for years below 1964 are not available in this source. The conversion of bolivars into U.S. dollars is based on the rate 4.3 bolivars = 1 U.S. dollar, this rate has been maintained steady since 1961 to nowadays because of an economic agreement between Venezuela and the U.S.A.

There is a consensus among the authors that have analyzed Venezuelan Education, that the current state of Higher Education is "critical." This has become a commonplace word for the analysts of the situation and for the communication media that constantly report "problems" in the universities. Given the limitations of scope of this paper, only a rough discussion of the main symptoms of the "crisis" will be reviewed here. In order to do that, three major issues for the valuation of the current state of Higher Education in Venezuela will be analyzed: the so-called "massification" problem, the low achievement, and the "lockout" of access.

The "Massification" Problem

"Massification" is the name that has received in Venezuela a striking phenomenon that began in the second part of the decade of the 60's, and that is typified by an extraordinarily massive growth of the demand for Higher Education. This phenomenon can be appreciated in Fig. 3, in the curve A representing the progression of the student population of Venezuelan Universities.[27] It can be observed that the

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[27] This curve represents only the student population of universities, and not that of other institutions of Higher Education like Colleges and Polytechnics. However, the situation for those institutions is very similar even when it is not so remarkable. The reason is that in Venezuela there is a common belief that conceives the universities as the most expedite pathway for social promotion. Therefore, the population of the universities does more than triplicate that of other institutions put together.

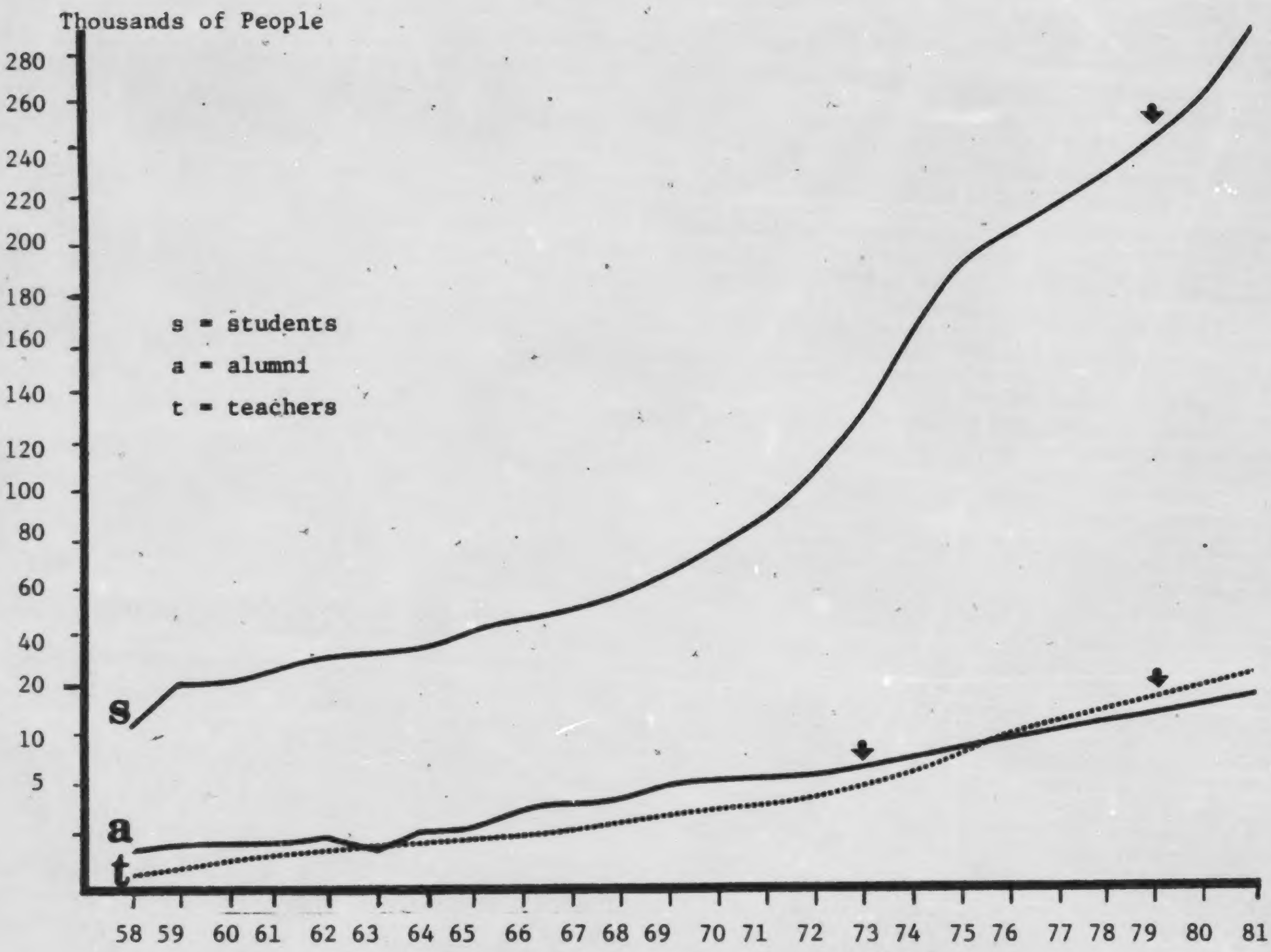

Figure 3. Graphic comparison of the growth of students, alumni and teachers in Venezuelan Universities during 1958-1981.[28]

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[28] This graph was constructed by integrating several tables appearing in a statistics report of the National Council of Universities: Consejo Nacional de Universidades, Informacion Basica Sobre Algunas Variables Importantes en Educacion Superior (Caracas: August 1980). Frequency polygons were plotted on the basis of the tables for each variable and then the curves were smothered by a graphic method. The idea of this figure is to show an overview of the development of those variables for purposes of a comparison among them; and this does not demand complete accuracy. Furthermore, as some of the last years data are lacking or cannot be obtained yet, it was necessary to do graphic projections for the not-shown data. The arrows on the lines indicate that, from that point to the right the values are projected and not real.

The curve of "alumni" was moved seven places to the left, in order to make a match between the number of students enrolled in a year and the number of alumni that should correspond to the same cohort. This procedure is based in a rough approximation, supported by the known fact that the average time taken by a student for finishing a university career in Venezuela is 7 years, even when most of the programs are planned for 5 years.

It should be noted also, that the curves A and T are presented in a different scale than that of curve S. The reason is that the changes in teachers and alumni have been so small, as compared to those of the students, that if all the variables were represented in the same scale, the curves A and T would become completely flattened down.

student population, after a slow growth from 1958 to 1964, began to climb very fast until it reached the 300 thousands by 1981. This means that in 22 years, the volume of University students has been multiplied 20 times with respect to the figure of 1958. According to Drayer and Castillo,[29] "in the next decade of the 80's, the enrollment in Higher Education, even when it will continue growing in absolute figures, will tend toward a stabilization of the annual rate of growth [......]. However, due to a spur in the curve of Elementary Education that began to appear in 1974, we may think that it will be a new acceleration wave of the growth in Higher Education, especially if we consider the effects of the immigration registered in the country during the last years."

The reasons for massification are very complex and they will not be analyzed here. In addition to a lack of planning, there is an incidence of new factors created by the process of democratization initiated in 1958. On the other hand, the consequences of this phenomenon are extremely critical, to such an extent that most, if not all, of the frequent conflicts at present in Venezuelan universities are caused by pressures originating in this problem.

The consequences of "massification" for UNA are almost immediate, because one of the factors that weighed in the decision of the National Government was that it could be used as a safety valve for that problem. Even when this idea does not correspond to the official position of UNA, the communication media and important opinion leaders in the field of

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[29] Drayer and Castillo (Op. Cit., page 113). The new acceleration wave they mention will begin around 1985-1986, considering 11 years of Elementary plus High School. Translation of the quotation was done by the author of the paper.

Higher Education have disseminated this assumption.[30] In this respect, UNA has made efforts for propagating the idea that it is a special kind of institution most appropriate for adults who work and not for youngsters. However the external pressures linger on, and at each new admission UNA receives a lot of students that could not enter other institutions; even more, the other universities frequently advise to those students who maintain a high rate of course repeat to apply to UNA. The Minister of Education himself in a recent public speech (May 1981) told the wandering students that cannot find a place that UNA is an alternative. Apparently, it will not be easy to file the dossier of the "safety valve."

In a more elaborate analysis, it has been suggested that UNA could contribute to solving the massification problem, not by absorbing large amounts of young studenta that probably will drop out easily, but by offering them distance courses in basic areas such as Math, Language, Foundation of Science, etc. Then, they would be able to earn valid credits while they wait to enter a conventional university, and thus the pressure for getting places might be reduced. Additionally, the same courses may be presented as an alternative to those students who fail in conventional university courses, and are occupying places that should be offered to new students.

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[30] See, for instance, Orlando Albornoz, Teoría y Praxis de la Educación Superior Venezolana (Caracas: editions of the Faculty of Humanities and Education of the Central University, 1979). He discusses (page 27) that UNA is a pallative for the demand of places in Higher Education.

Low Achievement

In the analysis of this problem, it must be acknowledge in the first place that Higher Education achievement is a variable very difficult to measure, because of the complexity of its dimensions. It can be argued even that it is not a variable but a cluster of variables. Hence, the rather simple analysis presented here is intended to show the interplay of four key variables: budget, teachers, student enrollment, and alumni production. The first three of them can be qualified as independent variables and the fourth one would be the dependent variable. The analysis of these four variables can give a general idea of the state of the output or achievement of Higher Education in Venezuela.

Going back to Figure 3 it should be observed that while student enrollment (curve S) grows very fast, the number of alumni produced for each cohort grows very slowly. Even more, the rate of growth of alumni as compared with the number of students enrolled seven years previously tends to be negative. For instance, in 1958 approximately 13.5% of the students enrolled in 1951 were graduates; in 1979 only 8.4% of the students enrolled in 1973 were graduates. If this progression continues as shown in the figure, each year there will be fewer alumni in proportion to the number of enrolled students even when the absolute number of alumni grows.

There are many factors that influence this shortage of alumni, but one of the most important--according to many international studies--is the proportion of teachers per students. In this respect, it can be observed that the curves S and T tend to be more separate with time. If in 1958 there was in the universities 1 teacher per 9 students--which is low according to international standards; in 1979 there was

1 teacher per 13 students.

If the variable budget is included, as seen in Figure 4, a more striking conclusion can be obtained. This figure is constructed not on the basis of absolute numbers, because it makes little sense to compare students and money, but on the basis of the rate of growth for students and money. Thus a standard value of 100 is stated for the two variables in 1964-65, then this value is increased according to the rate of growth for the next year, and so on. It can be appreciated that from 1973-79 to the present the rate of growth of budget began to surpass the rate of growth of students and even doubled it in 1978. However, the additional injections of money that were made possible by the sudden increase in the price of Venezuelan Oil in 1973, did not have a positive effect on achievement, as it was seen before. In other words, the financial support from the Nation to the universities is year by year less effective in terms of the production of alumni. This phenomenon closely resembles to what the economists call a "diminishing marginal return," meaning that each new unit of money put into the system is unable to generate an additional revenue. This is an important frame of reference for any evaluation study that is carried out on Venezuelan universities in the decade of the eighties.

The "Lockout" of Access to Universities

One of the analysts of the situation of Higher Education in Venezuela, Luken Quintana,[31] has postulated a well founded hypothesis

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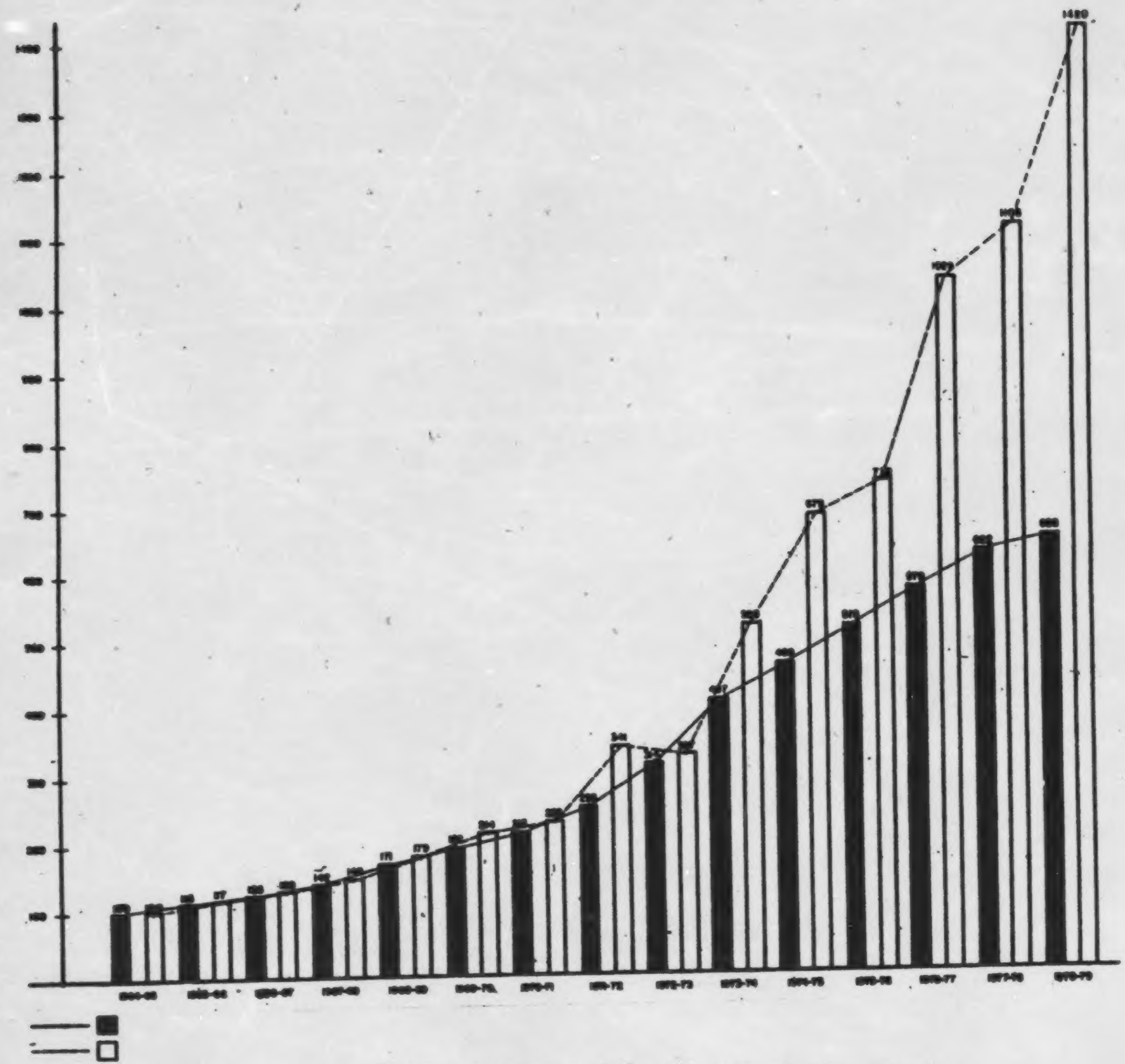
[31] Quintana, Luken. Educación Superior y Movilidad Social en el Período Democratico Representativo de la Venezuela Contemporánea (Caracas: Papeles Universitarios, 1981). He uses the Spanish term "cierre," which means "closure." But here it has been translated as "lockout" because this work conveys more clearly the meaning of Quintana's concept.



(Source: Venezuela's Ministry of Education)

Figure 4. Graphic Comparison of the Growth of Student Enrollment in Venezuelan Universities and the Assigned Budget per Year.

of what is going to happen with this speedy growth of student enrollment and financial expenses in the universities. He says that it has already begun a process that will tend to a lockout of the access to universities, in the sense that they will not accept yearly great increases in the number of students that are enrolled, but rather will tend to stabilize that number. Quintana argues that this is like a balancing mechanism that will allow the universities to consolidate themselves and try to achieve more effectiveness and efficiency. He points out that three recent policies of the National Council of Universities (NCU) shows clearly the tendency to the lockout.

In the first place,[31] the enrollment of beginning students in the universities has been centralized in the Planning Office of NCU, which is in charge of distributing the applicants according to the fixed share of new students that each university has agreed to accept per program. This is a policy that has been relatively successful, even when there is a lot of controversy about it. Students complain that due to this system, frequently they are assigned to places very far removed from their homes; other times they make picketing and hunger strikes on the universities to force the authorities to broaden the admission.

Secondly, there is a consensus among the authorities represented in NCU on the idea of promoting intensely the reallocation of students to short-cycle programs, like colleges, polytechnics, or technic institutes. These programs have an average duration of 3 years, while university programs have an average of 5.5 years. This policy is oriented to a reorganization of the Higher Education system in four levels: a) Basic Higher Education (General Studies or Core Curriculum), b) Intermediate Higher Education (Short programs oriented to mid-level professions), c) University Higher Education (long programs oriented to high-level professions), d) Graduate Programs: Master and Doctorate.

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[31] Luken Quintana (Op. Cit., page 20).

• In the third place, a National Exam for the Admission in Higher Education has been created. This one is an academic aptitude text that, since 1980, is administered to all the applicants to universities. It is aimed at a classification of the applicants, and to a diagnosis of those low-level aspirant students who would have problems for advancing in their chosen programs. Those aspirant students are not accepted immediately for enrollment, but are offered a remedial guidance program that is sponsored for all the universities and various high school institutions.

As a whole, the three policies that have been mentioned, plus some other complementary actions, reveal a progressive orientation to rationalize the growth of universities to manageable levels.

At the end of this chapter, the state of Higher Education in Venezuela briefly depicted here in its more salient characteristics, will be recalledin order to specify what guidelines can be learned from it for the CES of UNA.

Evaluation of Instructional Systems

General Models of Evaluation

In the recent history of Education, perhaps the concept that has presented the most diverse meanings and ways of usage is that of "Evaluation." This makes it difficult to organize evaluation activites in any institution, because one crucial question has to be answered in the first place: Within which framework or theory is the evaluation going to be developed?

It is convenient, then, to present here a brief review of the main conceptions or models of evaluation that have emerged in the former decades, in order to determine the adequate theoretical background for the CES. For that review the execellent summary of the evaluation models of Guba and Lincoln's Effective Evaluation will be used as a basic reference.[32]

They divide the history of the scientific concept of educational evaluation into four stages that may be briefly characterized as follows:

1. Evaluation = Measurement (1900-1930)

   The concept of evaluation is closely tied to research, because it is considered merely as an instrumental process in the study of behavior. Therefore evaluation is identified with measurement and, more specifically, with norm referenced measurement (emphasis on the appraisal of individual differences). The key authors of these times are Rice, Binet, and Thorndike.

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[32] Guba, Egon and Yvonna Lincoln, Effective Evaluation. (San Francisco: Jossey-Bass, 1981) Chapter I of this book is dedicated to a review of the conceptual orientations in Evaluation from 1900 to nowadays. This serves as an introduction to the theory of "Responsive and Naturalistic Approach to Evaluation," that they develop in the book.

2. Tyler Rationale (1930-1960)

The strongly influential idea of focalizing curriculum and instruction around objectives, conceiving the objectives as expected changes in behavior is established. Evaluation, then, becomes[33] "the process for determining the degree to which these changes in behavior are actually taking place." This conception, even when it had the merit of systematizing evaluation providing a clear instructional purpose for it, had a major disadvantage because the objectives were kept as external criteria to the evaluation process.

3. The Dissent Era (1960-1961)

This is characterized by a criticism of the Tyler Rationale, pointing its incompleteness as a foundation for evaluation. The leading critics and generators of new ideas were Cronbach, Scriven and Eisner. They considered that Tyler's model was based only in terminal outcomes. They redefined, then, the tasks of evaluation as not only providing feedback on results, but also contributing to the improvement of teaching and learning during the process. This required the combined use of summative and formative approaches.

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[33] Tyler, Ralph W., Basic Principles of Curriculum and Instruction. (Chicago: University of Chicago Press, 1949, page 64).

4. The Diversification of Models (1967 to nowadays)

Since 1967 the evolution of the discipline of evaluation has been characterized by the production of several parallel lines of development, which represent related but not inclusive approaches to evaluation. Guba and Lincoln (1981) divide these approaches into four groups:

a. Countenance Model:

In 1967 Stake proposed a rather descriptive model for evaluating that is based on the elaboration of two data matrices about the program being evaluated: the description matrix, that compares the intents (objectives) against observations of what is really happening; and the judgment matrix that matches the desirable standards of processes or products with judgments about them. These comparisons are applied in three levels of analysis: antecedents, transactions and outcomes.

b. CIPP Model:

This is a highly systematic proposition by Daniel Stufflebeam and co-workers. It has already been touched on in the Introduction (see pages 6 to 12). Essentially, it postulated an application of systems theory to evaluation, by identifying the systems and sub-systems in a determinate institution or program and performing four types of analyses: context evaluation, input evaluation, process evaluation, and product evaluation. These forms of evaluation are aimed at providing judgmental information for decision-making, on the four general processes that can be found in any institution: planning, organization of resources, program development and control or recycling.

c. Goal-Free Model:

This is more a suggestion than a model, presented by Scriven in 1972. It can be essentially summarized as follows: it is important not only to evaluate the achivement of desired goals, but also any other outcome --positive or negative--that has occurred because of the program. This proposition involves a very reasonable claim for a more open-minded evaluation, because--Scriven shows it with several examples--sometimes the non-intended results of a program are more valuable than the intended, from the point of view of educational usefulness.

d. Connoisseurship Model: (Eisner, 1975)

This, again, is a suggestion and not a formal model. It is based in a revival of the role of the human being as a measurement instrument. Evaluation should be based on appointing for judgmental tasks expert persons (connoisseurs) who have a global appraisal of the *evaluand*,[34] they will use their judgmental abilities and provide educational criticism to enlighten the problems and issues of the evaluand.

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[34] This term is borrowed from Scriven, it means "the thing being evaluated."

e. Responsive Model:

This is another contribution of Stake (1975), which emphasizes that evaluation must be planned according to the concerns and needs of the user. A plan of action is proposed that has to be followed by the evaluator, in order to achieve a really communicative relationship with the user or users. This is the basis for selecting the appropriate methods of evaluation, which have to be responsive to the audiences or users.

A remarkable characteristic of all this evolutionary process of ideas on evaluation, is that really none of the "models" has been substituted or abandoned in favor of another. All of them "are alive" and each one of them illuminates specific aspects in the area of evaluation: measurement, achievement of goals, in-process feedback, comparison between ideal and real, systematization of information for decision-making, aperture to incidental results, critical use of human experience, and responsiveness to users. For that reason, the selection of one or more approaches for a given program is not an absolute choice. It is indeed a decision in which some principles are going to be emphasized, and some others will remain in the background.

In the case of UNA, the ideas that seem more appropriate to emphasize are those of the systematization of information for decision-making and the responsiveness to users. In the first place, it was seen that UNA is a very complex system,[35] with many interactions among its units and a high volume of operations; this points to the need of an evaluation sub-system that is organized, dependable, and oriented to the different levels of decision-making. In the second place, evaluation must not be seen as an imposition, or judge, but as a dialogue process that responds to the needs of the users for helping to the global improvement of the institution.

The other principles deserve some attention also. The idea of measurement is important for the designing of evaluation instruments. The idea of goal achievement underlies the evaluation "hypotheses" that have been formulated,[36] but it is convenient to keep open the possibility of criticizing the initial goals or hypotheses, or formulating new ones on the way. Finally, the idea of using groups of experts as judges is incorporated as one of the operational procedures of the CES; but not all the evaluation is allowed to rely on judges, because this might cause a lot of political frictions between groups.[37]

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[35] For an analysis of this point, see the section on Institutional Context, pages 13 to 28.

[36] For a detailed explanation of the hypotheses, see pages 36 to 44.

[37] It has to be pointed out that Venezuelan universities are highly politicized institutions, due to the insertion of political parties and other power groups inside the Administrations. Of course, UNA is not an exception to this characteristic. For this reason, evaluation has to be carried out in a form that does not viniculate it with any political constituency. The frequent use of teams of judges for general evaluation tasks would lend itself to political polarization of the process.

The Evaluation of Instructional Processes and Products

Given the former orientations for the conceptual supporting of the CES, it is necessary now to look for specific guidelines related to the methodology of the system. In this respect, the enlightening principles come from the theory and practice of the evaluation of instructional processes and products, which have been derived from the initial propositions of Scriven and Crombach about formative and summative evaluation.

In the standard literature on this matter, there are three aspects that focus the attention of the authors: the definition of criteria for the evaluation of instructional processes and products, the design of the evaluation strategies, and the construction of evaluation techniques or instruments.

In relation to the first topic, Scriven[38] suggests a table of 13 criteria that--according to him--represent not only desirable but necessary characteristics of good instructional programs. These criteria are the following: existence of a need for the program, existence of a market, performance in true field trials, performance as appraised by the consumer, performance against critical comparisons with other programs, performance in the long term, acceptability of side effects, reliability and validity of the process, adequate appraisal of causal variables, statistical significance of outcome measures, educational significance of outcomes, cost/effectiveness ratio, and extended support. Given this list, it is really difficult to think about a criterion that is not listed nor is a subset of another one on the list. However, it is convenient to group these criteria in broader categories as: desirability, effectiveness, feasibility, economic efficiency, and so on. This grouping will make it easier to manage the evaluative information.

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[38] Scriven, Michael. Standards for the evaluation of educational programs and products, in Gary Borich (ed.) Evaluating Educational Programs and Products (Englewood Cliffs, New Jersey: Ed. Tech. Publications, 1974, pages 5-38).

The evaluation design usually recommended for educational programs based in the application os individualized instructional materials, as in the case of UNA, is that of a multi-stage process that parallels the phases of development of the program. This multi-stage approach has several advantages; in the first place, as Wright and Hess[39] explain, these educational programs have discernible stages in their life, therefore it is a "natural" approach to follow and feedback those stages through evaluation of planning, design, production, use, recyclage, etc. Secondly, the variables that interplay in the programs are too many to be analyzed in a one-trial act, therefore an analysis in several stages allows for a better control of the variables; finally, the whole process may become more economic, because each evaluation phase allows for corrections in the intermediate products, thus preventing the occurrence of great failures at the end.

Wright and Hess[40] conceive five stages of evaluation in the development of an educational product:

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[39] William Wright and Robert Hess, A criteria-acquisition model for educational product evaluation, in Gary Borich (ed.) (Op. Cit., 1974, pages 153-185).

[40] Ibid., page 154.

initiation stage: overview of the needs for the program, the curriculum and the audiences to be served.

hot house: initial tryout of the product with a small group

pilot-test: a small-scale trial with good control on the conditions.

field-test: extended use in the real targeted population.

A similar scheme can be found in many other authors. For instance, Bertram and Childers[41] suggest grouping conceptually and methodologically the evaluative process in three major phases, each one with subordinate stages: Program Planning, Product Development and Product Diffusion.

Any of these models could be applicable to UNA, but there are some considerations about feasibility that must be taken into account. This analysis will be made in Chapter III.

In respect to the techniques and instruments of evaluation, the general tendency is toward the elaboration of precise instruments--like questionnaires, tests or observation guides--in order to collect the data for the studies. These techniques are preferred to other more open like interviews, case studies or free observation. This tendency is probably due to the convenience of including as many opinions or responses as possible, when an instructional material is evaluated. With this procedure it is also easier to develop programs that may be useful to many persons.

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[41] Charles L. Bertram and Robert D. Childers. A Multistage Model for Evaluating Educational Products, in Gary Borich (ed.) (Op. Cit., 1974, pages 153-170).

Previous Experiences in the Evaluation of Teaching-at-a-Distance Systems

An obvious source of ideas for a new system of evaluation applied to a distance and individualized teaching system--as is the case of UNA--is the accumulated experience in similar institutions. It can be argued that there are enough experiences of "Open Universities" in the world, in order to do a comparative analysis.[42] However, in this paper only the evaluation model of the British Open University specifically will be considered, because it is the one that has done most extensive publications on evaluation and research studies.

Evaluation activities began at the Open University in 1969,[43] when the first course on Science Foundation was developed. From the beginning, evaluation was conceived as a support of the course development and implementation process, in order to provide feedback information for the improvement of the course materials and administrative procedures. Since then, the model has been constantly refined, and has accumulated a lot of information.

The stages of evaluation in the OU Model, as summarized by Melton (1977), are the following:

1) Course team interactions: is the reviewing of successive drafts of the materials by members of the course development

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[42] The listing of countries that utilize the Open University Model grows year by year: England, West Germany, Spain, Holland, Costa Rica, Venezuela, Brazil, Colombia, United Stated, India, Thailand, Niger, Israel, Iran,Sri Lanka and some others.

[43] Melton, Reginald, Course Evaluation at the Open University: A Case Study, in British Journal of Educational Technology, v. 8, n. 2, May 1977.

teams and external experts.

2) Formative student testing: tryout of the finished drafts with a small group of students, in order to detect problems of comprehension or continuity.

3) General surveys: these are applied to large samples of actual users during a period of 4 years, which is considered as the minimum before planning the reactualization on the course. The surveys provide information about difficulty, adequateness of the information pace, usefulness and other factors.

4) Detailed survey: this one is applied to smaller samples, and it is aimed at identifying the sources of the difficulties or problems that were found in the general surveys. This kind of survey demands from the student a detailed reaction on objectives, units, concepts and so on.

5) Item analysis: This method is applied as a complement to the student perception. The evaluators in OU have found that many times the actual results on tests do not correspond to the appraisal of the easiness or difficulty as perceived by the student in the related sections of the material.

These five steps are applied on the written material or correspondence textbooks, which is the basic medium for the OU. The audiovisual and other complementary materials,[44] are also evaluated in a staged form, that roughly follows the same pattern of analysis: drafts (or scripts), small group, large survey, detailed analysis.

There are some critical circumstances that have been faced by the evaluators in the OU, being also meaningful for the CES. In the first place,[45] they found that the formative student testing was not very useful in the beginning because the number of students was too small, and they have to study the materials in different conditions of time and support as compared to the real students; additionally, those were worried because they did not receive credit units in this simulated tryout of the course; later, the evaluators of OU managed ways to offer the draft materials with all the facilities and accreditations as a normal course.

In the second place,[46] they had problems in indicating for the course teams the amount of "remaking" that a course needed after evaluation. Of course, there were economic issues involved. Then, they decided to apply a 5-category model of intensity of changes:

Continuation: the same course, no changes.

Revision: minor alterations.

Improvement: major alterations as rewriting units.

Replacement: complete rewrite of course.

Withdrawal: elimination of the course from the curriculum.

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[44] For a detailed discussion of this point, see Bates and Gallagher. A Summary of the 1974/1975 Broadcast Evaluation Programme. (Milton Keynes: Open University Press, 1975.

[45] Melton, op. cit., page 2.

[46] McCormick, R. Evaluation of Open University Course Materials (in Instructional Science, US, (1976), pages 189-217).

All these experiences of the OU are useful in helping to enlighten the CES of UNA.

Summary of Requirements of the CES of UNA

In the previous review of the literature there have been analyzed several topics that bear relationship with the design of CES, these topics may be categorized into two sub-groups: a) Aspects of the current situation of Higher Education in Venezuela, b) Standard characteristics of known systems for the evaluation of instructional processes and products. The purpose of this sub-section is to derive from these topics some propositions about the desired characteristics of the CES. In other words, it is intended to establish a series of requirements or desiderata that have to be accomplished by the CES, in order to be *relevant* to the contextual considerations and technically *valid* from the point of view of standard evaluation practices.

Requirements of Relevancy

a) UNA has to assume that one of its main functions is to offer access to opportunities Higher Education for a population that otherwise would be denied that right. Part of this population is formed by adult learners, but another part is formed by students who are affected by the problem of massification and failed to enter or to remain in another institution. Consequently, the requirement may be formulated as follows: The evaluation system must ask constantly the question of how open is UNA for the potential population. This means determining periodically the actual and potential student population and evaluating the proportion of potential students that are actually served in each category of age and social status. This kind of evaluation is to be used for providing feedback to the promotion and selection of students, particularly through the Introductory Course, which is the initial contact the student has with the University.

b) Evaluation has to take account of the low achievement problem in Venezuelan Higher Education, and must try to promote a better achievement in UNA as compared to other universities. This achievement must be quantitative--in terms of amount of students promoted per course and per program--and qualitative--in terms of excelling in measures of learning and student satisfaction. This requires an evaluation system that accurately evaluates outcomes, and provides explanationsof the variables that influence positively or negatively these outcomes.

c) Evaluation has to take account of the financial problem of Venezuelan universities. This means that it has to provide methods and techniques to appraise the costs and benefits of UNA courses and programs, and then report this information in a way that can be used to make decisions aimed at cost reduction and improvement of benefits. This information has to be diagnostic and also prognostic.

Requirements of Technical Validity

a) The CES must be oriented to provide information for decision-making at the different levels of the organization, and this function has to be tailored to the interested audiences for evaluation. This last point means that the characteristics of evaluative information are to be established on the basis of a continuous communication between evaluators and audiences, and not on the basis of merely technical analysis. Evaluators have to acquaint the audiences to their methods of retrieval, processing and reporting information.

b) The CES has to perform the standard evaluation function of appraising goal achievement. The goals are defined at three levels: institution, curriculum (or program) and course. However, the CES is due to keeping a certain degree of openness that allows it to seek for other outcomes not predefined in the goals, and also subject the goals to critical analysis.

c) The CES has to consider stages in the evaluation of courses and curricula. These stages must correspond to the already established phases of planning, design, production and implementation of courses. Each stage will provide the possibility of feedback and correction in the corresponding phase of development. Equally, provisions have to be taken in order to insure the integration of evaluative information from several stages.

d) Evaluation in CES is to be based in clearly defined and operationalized criteria, these criteria will be derived from the desirable characteristics of programs and courses as suggested by the evaluation hypotheses. These criteria have a provisional status, meaning that they can be reviewed whenever if necessary to introduce new issues for evaluation. These criteria will serve as references for the design of evaluation instruments.

e) In order to prevent confusions in decision making, a scale or gradient is going to be defined for the major types of changes in the products that are going to be evaluated. This means that for each particular product--i.e., a textbook--there will be an operational definition of the possible grades of changes--i.e., continue, review, improve, etc.--in order to create a common code among evaluators, developers, administrators, advisors and students. This will facilitate decision-making.

CHAPTER III

METHOD AND DESIGN

Essential Components of CES

In the preceding sections, the essential ideas that underlie the whole conception of the CES have been presented. In this chapter, these ideas will be integrated in order to describe the model of that system. This description will be necessarily succinct, because of the tentative character of this proposal. An exhaustive description may be presented in the future, once the system has been implemented and its definite traits are more clear. It is important to point out in this respect, that the implementation of a model like this--which intends to cover the main processes and products of UNA--requires considerable consultation and negotiation among and within the involved units. This may be seen as the most critical phase in the development of the model. Therefore, it is expected that during that time, several changes will alter the original conception of the model. In prevention of those changes, the CES will be presented here in a kind of draft with the purpose of orienting the initiation of its development.

To begin with, it may be said that the CES will be constituted by the following elements:

a) A set of interconnected evaluation procedures that will be applied on key processes and products of the instructional system, with the purpose of providing useful information to determinate audiences. "interconnection of procedures" means

that there will be an exchange of data among them.
The procedures have an iterative character--they are repeated cyclically--because the mode of operation of UNA is based on an iterative process of planning, design and implementation of Higher Education programs.

b) A supportive network of information and communication that is originated by the continuous reporting of evaluation results to the interested audiences. This network is conceptualized as a series of two-way communication links between evaluators and audiences: evaluators present reports to audiences, and then receive feedback about their reports and procedures. Some of the reporting activity is formal and scheduled, when the information is required for prescribed events like the following: approval of course plans, elaboration of the annual budget project, presentation of end-of-semester results, and so on. Some other will be informal and incidental, as for instance when the Unit of Evaluation calls for a meeting in order to openly discuss the problems of the courses.

c) A series of defined functional relationships between the Evaluation Unit, which is the coordinator of the CES, and the rest of the units of the system acting as clients and/or operators of the CES. One unit is a client when it only uses the evaluative information as a service; one unit is an operator when it participates in the obtention of evaluation data.

d) A finite set of evaluation criteria and evaluation instruments that are used as judgmental tools for obtaining and judging data. These criteria and instruments must be explicit in order to avoid flaws of communication between the operators and clients of the CES.

e) A set of evaluation files that facilitate the organization, storage and retrieval of the evaluative information. It is important that those files are permanent, to guarantee that they carry the history of the programs and courses, and that they are constantly up-dated with current information. The construction of dependable files is one of the most immediate tasks in the development of the CES.

It may be noted that the evaluation system described here is not properly a physical entity, even when it relies partially on physical elements. It is rather a conceptual structure that allows the people in UNA to pursue common goals of appraising the quality, effectiveness and efficiency of the system.

The Evaluation Model

Figure 5 presents the conceptual model that will be used as the basis for designing the CES. This model is congruent with the definition adopted at the beginning,[48] and it summarizes the essential features to be considered in an evaluation process into an educational context. The following analysis of the components of the model will help to clarify its heuristic utility.

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[48] For a detailed explanation of the evaluation concept, see this paper on pages 5 to 9.

The main trait to be stressed by the model is that evaluation is an interactive activity; such interaction occurs between two poles: persons who act as judges of determinate processes and/or products (evaluator side) and other persons who receive or use the judgmental information for determinate purposes (audience side). None of these roles is absolute, meaning that he who acts now as an evaluator may be later a member of the audience. Evaluators and audiences are constantly communicating between themselves, and exchanging influences on issues like the definition of needs for evaluation, the evaluation criteria, the procedures, etc.

The interaction process between evaluator and audience is initiated when certain information needs of the audience are defined; in other words when it is determined what kind of input is required for a person or a group interested in evaluating some process or product, in order to use the resulting information for determinate purposes. On the basis of those needs the evaluator, with the collaboration of the audience, defines the criteria for evaluation which become frames of reference for judgment. These criteria are applied in the evaluation strategies which are systematic or not systematic ways of obtaining valorative information about the evaluand which is the process or product being evaluated, and is the center of the interaction between evalutor and audience. The application of procedures allows collection, analysis, and reporting of the evaluative information to the audience, which in turn will use

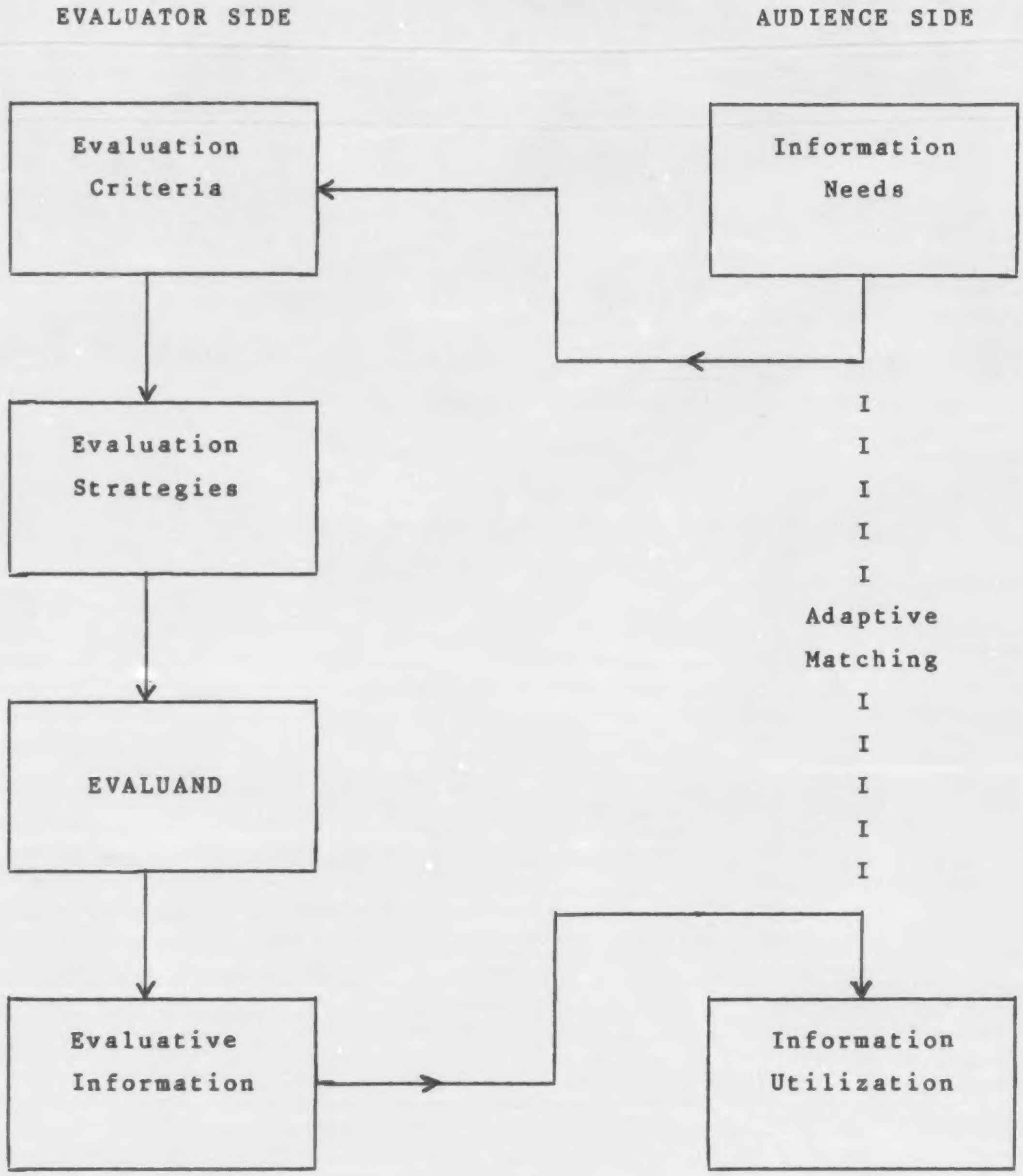
EVALUATOR SIDE
AUDIENCE SIDE
Evaluation Criteria
Information Needs
Evaluation Strategies
Adaptive Matching
EVALUAND
Evaluative Information
Information Utilization

Figure 5. Simplified Interactive Evaluation Model for the CES.

that information for decision making, analysis of current problems, assignation of resources, or other purposes. When the information reaches the audience it is "matched" with the stated needs in order to determine if it corresponds to what was expected; usually the evaluator is involved in this adaptive matching that facilitates the improvement of the whole process.

Each one of the boxes in the model identifies a crucial aspect of evaluation that has to be defined whenever one has to evaluate something. Therefore, this model will be used as a point of departure for defining the components of the evaluation procedures of the CES.

Figure 6 represents an expansion of the model by applying it to the functional structure of UNA. It includes essentially the same elements as Figure 5, but each group of components has been reshaped in order to match the conceptual model of the institution.[49]

In the expanded model, the "Evaluator Side" is substituted by the Evaluation Unit, which is the operational nucleus of the CES. This unit has to perform the functions assigned to the evaluator: define information needs, define evaluation criteria, design evaluation procedures and report information. However the application of the procedures cannot be performed in fact by this unit because of the size of the system; it would mean that the Evaluation Unit would have to have representatives in all the Local Centers of UNA. Instead of that, the Evaluation Unit will coordinate the application of procedures by delegating the operative tasks to other units.

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[49] The conceptual model is developed in the Introduction on pages 14 to 31.

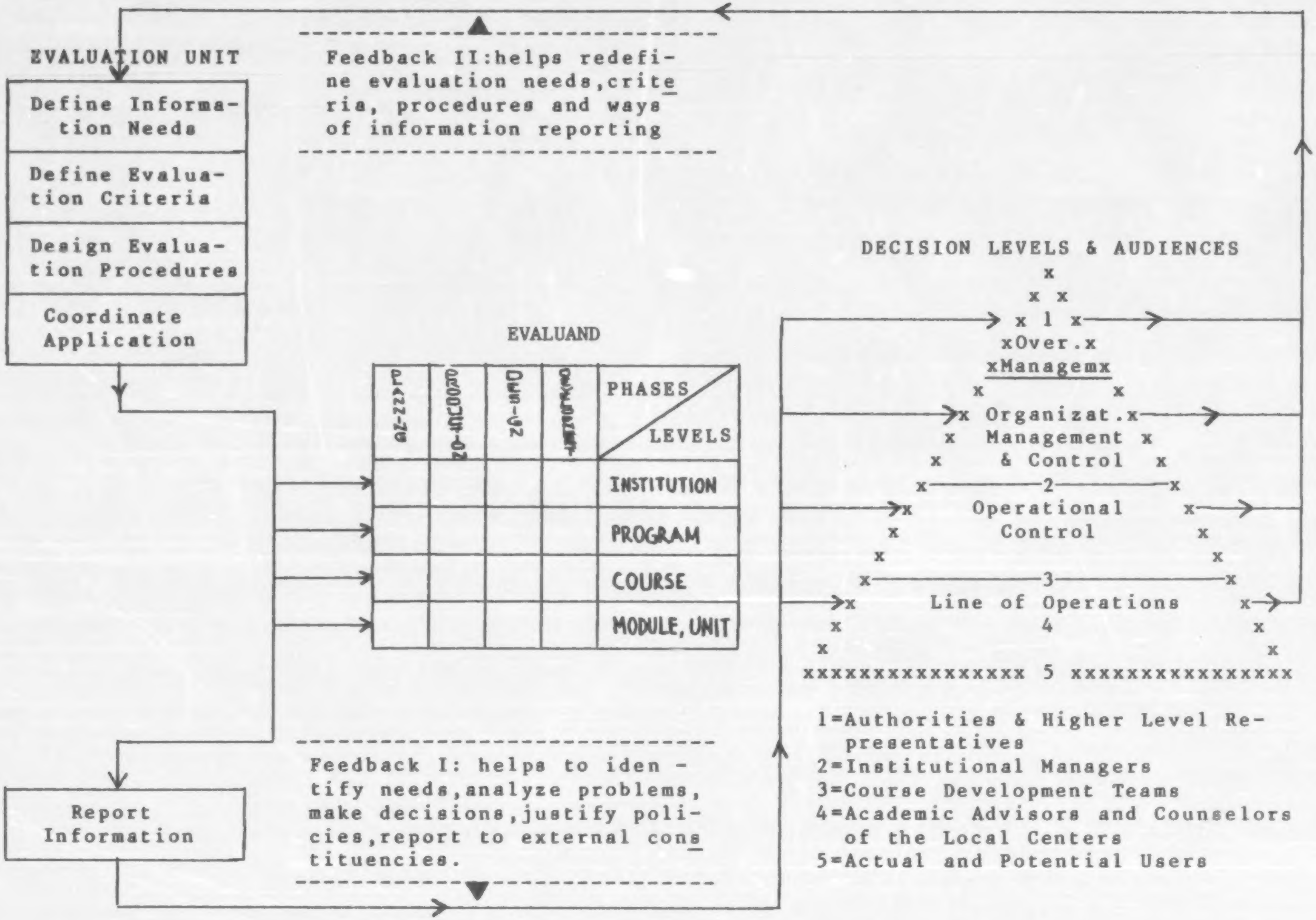
EVALUATION UNIT
Define Information Needs
Define Evaluation Criteria
Design Evaluation Procedures
Coordinate Application
Feedback II:helps redefine evaluation needs,criteria, procedures and ways of information reporting
EVALUAND
PLANNING
PRODUCTION
DESIGN
DEVELOPMENT
PHASES
LEVELS
INSTITUTION
PROGRAM
COURSE
MODULE, UNIT
DECISION LEVELS & AUDIENCES
1
Over.
Managem
Organizat.
Management
& Control
2
Operational
Control
3
Line of Operations
4
5
1=Authorities & Higher Level Representatives
2=Institutional Managers
3=Course Development Teams
4=Academic Advisors and Counselors of the Local Centers
5=Actual and Potential Users
Report Information
Feedback I: helps to identify needs,analyze problems, make decisions,justify policies,report to external constituencies.

Figure 6. Extended Interactive Evaluation Model of the CES

The evaluand is represented in the expanded model by a matrix that cotains the following: in the lines, each one of the levels of analysis to be studied: Institution, Program, Course, and Module or Unit; in the columns, the different functional processes of UNA's Instructional System: Planning, Design, Production and Development. Every one of the "cells" formed in this matrix may be a subject to evaluation or an "evaluand," but the economic and operational limitations make constraints on the number of "cells" actually evaluated. However, it is possible in the future to enlarge the number of subjects for evaluation.

On the audience side the "organizational pyramid" of UNA is represented, with the four decision levels.[50] They receive the evaluative information (Feedback I) and also communicate information to the Evaluation Unit (Feedback II). It may be noticed that the two types of feedback differ in content: Feedback I is information related to the subjects of evaluation or "evaluands," and Feedback II is information related to the evaluation process, it is evaluation of evaluation.

The purpose of the simplified and the expanded models is to serve as a general orientation for designing and articulating the components of the CES.

Evaluation Stages

According to the Expanded Model that was presented in the previous section, it is possible to think that the number of evaluation phases or stages required to monitor the whole Instructional Systems of UNA will be around 20, and these can be divided into many sub-stages. This number is obtained by multiplying the number of lines by the number of rows in the Evaluand box (which means levels of analysis x functions), and adding 1 more summative stage for each level of analysis: evaluation of the whole Institution, evaluation of the whole Program, and so on. However, even when this number is theoretically possible, the number of actual evaluation stages has to be reduced according to the resources available in the institution for carrying out these activities. Therefore, it is suggested here that UNA might begin with the number of evaluation stages that are really necessary to help the system progress without major failures. As a "major failure" it is understood that when a significant part of a program--i.e., one complete semester formed by 4 courses--has to be removed from the offerings.

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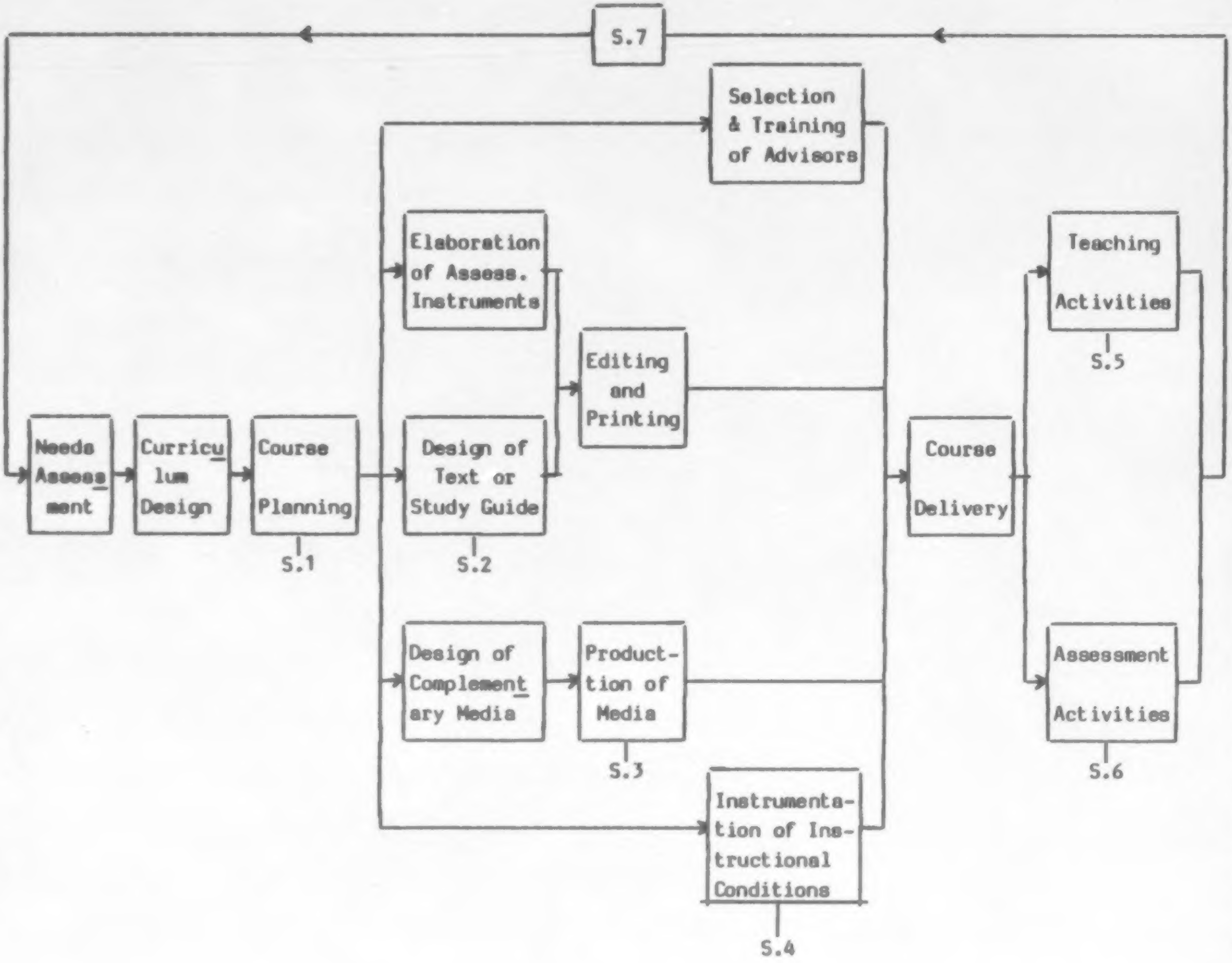
[50] A more detailed presentation of UNA's organization is found in Table 3.

In order to identify these key stages, it is convenient to analyze the whole process of Planning, Design, Production and Development of Instruction in UNA. This process is depicted in Figure 7; it can be observed there that a minimum of 7 stages is required to provide a "fool-proof" evaluation. It follows a discussion of the reasons for this selection of seven stages and a description of each stage.

Stage 1: Evaluation of Course Plans.

When a course is going to be produced in UNA, it is planned in a detailed format that includes: rationale, objectives, instructional strategies, resource specification, time plan and cost analysis. This is the "course plan" which is a very important orientation for all the following activities of design, production and evelopment; any flaw in a plan will be reflected in the rest of the process. For that


S.7
Selection & Training of Advisors
Elaboration of Assess. Instruments
Editing and Printing
Teaching Activities
S.5
Needs Assessment
Curriculum Design
Course Planning
Design of Text or Study Guide
Course Delivery
S.1
S.2
Design of Complementary Media
Production of Media
Assessment Activities
S.3
S.6
Instrumentation of Instructional Conditions
S.4

S.1 = Evaluation of Course Plans

S.2 = Evaluation of the Design of tTexts and Study Guides

S.3 = Evaluation of the Audiovisual Products

S.4 = Evaluation of the Instrumentation of Instructional Conditions

S.5 = Evaluation of Teaching

S.6 = Evaluation of Assessment

S.7 = Summative Evaluation

Figure 7. Process of Planning, Design, Production and Development of UNA Courses and the Evaluation Stages

reason, it is convenient that the Course Plans are carefully evaluated. By doing that, the former steps of Curriculum Planning and Needs Assessment are also evaluated indirectly, because the first step in planning a Course is to review the curriculum specifications for that course and the information about needs.

Stage 2: Evaluation of the Design of Texts and Study Guides.

This stage is bonded to the intellectual elaboration of the individualized textbook or individualizing study guide,[51] which is the central material of the course packages of UNA. This process takes usually from 8 to 12 months, according to the accumulated experience. It starts with a review of the Course Plan, which is transformed into a series of specifications for design by using the techniques of task analysis or content analysis; then, several drafts of the learning modules are produced and reviewed successively until an acceptable version is achieved. This process requires formative evaluation in order to assure high quality of the output.

It may be noted also that, by evaluating the design of the study guide, some feedback can be supplied to the assessment instruments and complementary media (usually audiovisuals), because they are linked in content with the written text or guide.

Stage 3: Evaluation of the Audiovisual Products.

This stage is referred to as the revision of the audiovisual materials--television programs, films, audiocassettes, etc.--before they are delivered to the students. It is important to do this not only to assure the technical quality of the materials by themselves, but to prevent any collision among the content stated in the written material and that of the audiovisual programs. The evaluation of audiovisuals is focused on the final production step because, even when they are elaborated on the basis of a carefully designed script, the written vesion can never give a complete idea of the finished product.

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[51] For an explanation of the structure of the individualized textbooks or individualized study guides, see page in the Introduction.

Stage 4: Evaluation of the Instrumentation of Instructional Conditions.

The name of "Instrumentation" has been assigned to a series of activities that are performed in the Local Centers, before a determinate course is offered, in order to assure that all the physical and logistical requirements for that course are set in the moment of the initiation. These requirements usually include: facilities, equipment, materials, agreements with institutions that will receive visiting students, and so on. If one thinks that UNA offers the same course in 20 centers, the magnitude and complexity of the operation can be appreciated.

This evaluation stage is a kind of checking that prevents the occurrence of problems in the implementation of the courses.

There are two points here that are not included in the evaluation stages due to specific reasons. In the first place, there is the Selection and Training of Academic Advisors; this task involves by itself some evaluation, but it is carried out according to the specific bylaws of the University in relation to personnel contracting that cannot be altered at will. Then, it has been considered most useful to evaluate the advisors in the field, when they are accomplishing their function in front of the students (Stage 5). In the second place, there is the Editing and Printing of the materials that currently is executed outside UNA through contracted editors; this process uses very specific rules and standards that are specified in each contract, and controlled by the Publications Unit of UNA.

Stage 5: Evaluation of the Teaching Activities.

This involves the field evaluation of the course materials and the utilization procedures. It is a very crucial stage because it allows for an appraisal of the outcomes of instruction. The information gathered here is useful for providing feedback to the whole process. Due to the multimedia characteristic of the teaching-at-a-distance system, this stage must cover all the aspects that are relevant for instruction: written texts or guides, audiovisual programs, experiential kits, academic advisory, facilities, equipment, library resources and external environments for in-service training.

Stage 6: Evaluation of Assessment Activities.

This stage involves two major aspects: one one hand, the evaluation of the administration of assessment procedures and instruments, in order to assure uniformity, objectivity, and trustworthiness; on the other hand, the analysis of student responses by statistical treatments, in order to provide information about performance. The last of these aspects is useful not only to determine statistical indexes about test reliability, validity, difficulty and so on, but also for monitoring the effectiveness of the instructional materials and the problems that the students have had along their self-managed learning.

Stage 7: Summative Evaluation of the Courses.

This is a synthetical examination of the data obtained in previous evaluation stages, plus other data provided by other sources as: financial records, research studies, national statistics and others. It allows the presentation of a global report of the impact of the courses, including data on the favorable and unfavorable aspects of design and development, the cost/effectiveness ratios of program and course, and a critical analysis of goals and objectives. This summative evaluation will present suggestions for changes in the curriculum, the course plans, the instructional materials, and the administration of teaching and the testing procedures.

Evaluation Criteria

Criteria are conceivedby most authors as the frame of reference for evaluation, meaning that they stand as standards for comparison when the evaluator appraises reality. Stufflebeam states that:[52] "The fully explicated frame of reference, with the decision procedures it delineates, can be termed a *criterion model*. A model in thise sense is an idealized representation of the real world . . . ." Later, he explains that "we may look upon criteria as being yardsticks for values. Values themselves are predefined states of certain variables that occur in our real and ideal worlds." This definition of criteria as idealied or desired states of things, as they may be viewed through the optics of determinate values, will be used as an heuristic tool in the CES, in order to identify evaluation criteria that can be applied to the instructional system of UNA.

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[52] Stufflebeam, Daniel (et. al). *Educational Evaluation and Decision Making* (Itasca, Illinois: Peacock Pub., 1971, pages 107 and 109).

The first task in order to attain that purpose will be to analyze the realms of values that may be meaningful for the instructional processes in UNA. In other words, to inquire about which are the cognitive sources of values that bear on some relationship with those processes.

In this respect, it is possible to identify at least six sources of criteria for the CES. They are:

1) Goals and Objectives at the level of Institution, Program, Course or Unit; they are stated as the ultimate landmarks to which the activities in the system and subsystems must arrive. Criteria of this kind may be termed Impact, Performance or Effectiveness criteria, depending on the more specific or broader sense that one wants to attribute to them.

2) External demands or needs that constitute the origin of the formulation of goals and objectives. These demands or needs may be placed at the level of society in general, or at the level of institutions or groups. They serve as a point of comparison to validate constantly the goals and objectives. Therefore the derived criteria may be termed Validating Criteria, these have the property of being in constant change.

3) *Resources employed in the operation of the system*, which have to be compared with achievement. This comparison leads to an *economic* analysis of the efficiency of the system. This can never be omitted in the evaluation of educational programs. These criteria may be termed *Cost/Effectiveness Ratio*, when one is speaking of an ongoing or terminated program, or *Feasibility Criteria*, if one is speaking of a projected program.

4) *The Scientific or Humanistic* knowledge of the disciplines to which the programs are related. In the case of UNA, thes disciplines are Administration and Business, Education, Engineering and Mathematics. The accumulated knowledge stands as an obligated frame of reference in order to know if a program or a course is scientifically correct, if it is up-to-date, if it has a good approach, and so on. The criteria related to knowledge will be termed *Content Criteria*.

5) *The State-of-the-Art in Educational Technology and Instructional Science*. This is also a kind of disciplinary knowledge, but it has to be considered as a special class in relation to UNA because it is an institution that is supposed to apply new developments in the field of instruction, in order to be able to achieve a high level of quality in the teaching-at-a-distance system. For that reason, the planning, design, production and development

of courses in UNA has to be analyzed in contrast with those principles of instruction that prove to be "effective"--i.e., behavioral objectives, task analysis, multimedia approach, criterion-referenced-assessment, etc. Of course, a selection of those principles and technologies must be done previously, in order to determine which of them are relevant for the particular setting of UNA. These criteria will be termed Instructional Criteria, and they are related principally to the hypotheses on instructional outcomes (see Introduction). For reasons of scientific parsimony, there will be included in this category also those criteria referred to the ancillary or connected technologies of instruction--i.e., television, radio, graphic arts, printing, etc.

6) The needs and demands of the users of UNA system. This refers mainly to the actual and potential students of UNA. They have special needs and expectations that are satisfied by participating in the teaching-at-a-distance system. Those are very important points of reference for evaluating UNA's responsiveness to its users; in other words, if it is really acting as an *open* university. These criteria will be called User Criteria.

The six groups of criteria defined here may be applied in each one of the seven stages of evaluation that were discussed in the previous section. However, it has to be pointed out that each group of criteria must be treated with different emphasis in each stage. For instance, in the stage of Evaluation of Teaching Activities, the Instructional Criteria and the Performance Criteria are the most important, but some attention should be paid to other criteria too. This point has to be taken into account for designing the evaluation procedures.

Provisional Listing of Criteria for Each Category

Given the six groups of criteria for the CES, enumeration of some of the criteria that will be used in each one of the groups will be intended. This listing has to be regarded as provisional because one of the purposes stated for the evaluation model (see page 76) is that the criteria have to be defined and periodically actualized with the agreement of the audiences of evaluation. On the other hand, the operation of CES will be by itself the ultimate judge of the adequacy or inadequacy of any criterion. Furthermore, some overlapping of criteria is expected in the listing.

1. Impact or Performance Criteria

In general, impact or performance can be measured in terms of objective or subjective criteria and indicators.

Examples of objective criteria are the following:

1.1 Performance in achievement tests: this allows for making pre-test/post-test comparisons, and a series of statistical measures: average, median, standard deviation, skewness, kurtosis, etc.

1.2 Performance in ability tests: can be used to validate hypotheses about changes in general thinking abilities as a result of General Studies.

1.3 Quality of papers and projects of the student: as a measure of academic accomplishment.

1.4 Adequacy of side effects; as the following: improvement in work, better appraisal by supervisors, etc.

1.5 Correspondence between courses, and knowledge and skills required for working in the professions.

1.6 Appropriateness of the sequencing within course and between courses as measured by the achievement curves.

1.7 Critical comparisons as: users with non-users, students of UNA with equivalent students of other universities, students of large urban centers with students of small urban or rural centers.

1.8 Analysis of time employed in the study of materials: time per unit, time per module, planned time against real time, etc.

Examples of subjective criteria are the following; generally the refer to individual feelings of the students.

1.9 Perceived difficulty of the courses, modules or units.

1.10 Perceived degree of organization of the distance teaching system.

1.11 Motivational appeal of the courses.

1.12 Perceived usefulness of the materials and courses.

1.13 Degree of satisfaction with the system of UNA.

1.14 Perceived congruence between course components and media.

1.15 Perceived relationship between courses and real work.

1.16 Perceived utility of self-assessment activities.

1.17 Perceived adequateness of the course requirements and assessments.

1.18 Degree of intellectual activation created by participation in UNA courses.

2. Validating Criteria

In general, these are referred to as comparisons between the goals and objectives of institution, programs, and courses and external references. Examples:

2.1 Correspondence of course outcomes with occupational profiles as determined by research.

2.2 Comparison between the output of UNA and the needs of human resources, current and prospective.

2.3 Correspondence of UNA programs with those of other universities in similar areas.

2.4 Degree of acceptance of UNA alumni as workers in industries and institutions.

2.5 Adequateness of UNA programs in respect to the scientific and technological advances in the fields.

2.6 Possibility of attending the needs of the communities through UNA programs and courses.

2.7 Amount of solicitudes of UNA courses by public and private institutions.

2.8 Correspondence between the actual student population of UNA and the expected or desired student population.

2.9 Changes in the statistics of student population due to the existence of UNA.

3. Cost-Effectiveness Criteria

These are usually evaluated as separate groups (cost and effectiveness) and then integrated in summative evaluations.

Appropriate cost criteria for UNA's programs are the following:

A. Fixed Costs

3.1 Capital investments in physical plant, equipment, facilities. These are amortized yearly.

3.2 Central Administration.

3.3 Local Centers Administration.

3.4 Faculty of the Central Level.

3.5 Multi-Media Libraries.

3.6 Computer Services (these are rented nowadays)

3.7 Rentals of Physical Facilities

B. Variable Costs

3.8 Design and production of written materials for instruction.

3.9 Production of audiovisual and experiential media.

3.10 Advisors and Counselors of the Local Centers.

3.11 Test and questionnaire printing.

3.12 Test and questionnaire supervision.

3.13 Text and questionnaire processing.

Appropriate benefits criteria for the programs of UNA are the following:

3.14 Amount of revenues from sales of instructional materials.

3.15 Costs per student per program as compared with other universities.

3.16 Costs per course per program as compared with other universities.

3.17 Donations from institutions served by UNA.

3.18 Ration between investment in course quality and student achievement.

3.19 Amount of institutions per region that are participating in UNA programs.

4. Content Criteria

These may be summarized as follows:

4.1 Scientific validity of knowledge, absence of errors.

4.2 Adequacy of methodological approach: the method of analysis and/or presentation of knowledge is appropriate.

4.3 Up-to-date information: the advances of knowledge in the discipline have been taken into account.

4.4 Conceptual structure: the organization of concepts is logical and well founded.

4.5 Scope of knowledge: the information of the subject matter is dealt with in enough extension and depth.

4.6 Applicability: adequate explanations and examples of the application of knowledge.

4.7 Clarification of difficult points: those aspects of content which are most difficult to understand are clearly discussed.

4.8 Adequateness of tools or equipment: those courses that require practical activities involving the use of instruments or equipment must have adequate support in this respect.

5. Instructional Criteria

In order to facilitate their utilization in the evaluation instruments, these criteria will be classified in design variables, technology variables, and advisor or tutor variables.

Among design variables may be counted the following:

5.1 Correspondence of material and strategies with behavioral objectives.

5.2 Objectives are matched with entry behavior of student.

5.3 Appropriateness of the sequence of content in order to facilitate learning.

5.4 The timing or rhythm of presentation of information is paced according to student performance.

5.5 Degree of internal congruity between objectives, content, strategies and ways of assessment.

5.6 Adequate use of redundancy as an element to facilitate learning.

5.7 Use of "advance organizers," as content outlines and introductions to modules and units.

5.8 Use of prompting aides for learning, i.e.: schemes, tables, algorithms, example frames and others.

5.9 Adequate emphasis on key concepts.

5.10 Presentation of reinforcements: feedback to self-evaluation, encouraging words, advance questions on the basis of satisfactory performance.

5.11 Ability of the self-instructional materials for creating active learning situations.

5.12 Style of the written or oral presentation of the information: fluency, interest, wit, clearness, etc.

5.13 Presentation of alternative routes for students: "branching" of lessons or units.

5.14 Opportune delivery of the instructional materials.

Among the technology variables may be counted the following:

5.15 Adequate techniques of presentation in TV or audio.

5.16 Quality of narration in TV or audio programs.

5.17 Clarity of image in TV programs.

5.18 Appropriateness of graphic design in textbooks or audiovisual programs.

5.19 Legibility of printed text.

Among the tutor or advisor variables may be counted the following:

5.20 Availability for helping the students.

5.21 Degree of competency in subject matter.

5.22 Ability to conduct individual and group meetings.

5.23 Resourcefulness: do not try to make a class, but really present alternatives for improvement.

5.24 Responsibility: keep schedules, keep records of students, be fair in evaluations, etc.

6. User Criteria

These refer mostly to feelings and attitudes of the distance student toward the institution and its system.

6.1 Enhancement of self-esteem for being a student in UNA.

6.2 Perceived self-development through UNA program.

6.3 Matching between the courses that UNA offers and student expectation about his/her career.

6.4 Perceived opportunity of access to the system.

6.5 Perception by the student that he/she is taken into consideration, that he/she is not acting alone.

6.6 Opportunity for interaction with people in the centers or learning environments.

6.7 Perceived egalitarianism and justice in the activities of UNA.

6.8 Opportunity for forming students associations and participating in cultural activities.

6.9 Self-control for avoiding untrustworthiness in the instructional environment--i.e., avoiding cheating or other inadequate forms of obtaining grades.

Evaluation Procedures

In order to define the evaluation procedures for the CES, it is necessary to go back to the Evaluation Model (see pages 78 to 82). It identifies the elements to be considered for formally defining an evaluation procedure:

Evaluand

Evaluator

Audience

Criteria for evaluation

Evaluation strategy

Type of reporting

Utilization of Information

It may be said that any explicit statement that includes all of these elements and is applied in an institution on a regular bais is an evaluation procedure.

Here, the evaluation procedures will be enumerated according to the list of evaluation stages. Some stages only need one procedure, and complex stages require several procedures.

Procedure I: Evaluation of the Course Plans

Evaluand: Course Plans, formed by a design part-that involves the course objectives, content, strategies and assessment plan--and a programatic part--that involves estimates of resources and time for producing and developing the course.

Evaluator: A committee appointed by the Academic Council; it is formed by content experts and instructional designers; usually 3 to 4 persons.

Audience: The Academic Council will receive the reports, as a terminal instance, but also the course developers will use it.

Criteria: The most important ones in this stage are those referred to Validation of Objectives, Cost/Effectiveness (feasibility), Content and Instruction.

Strategy: Detailed review and discussion. An instrument (see Appendix A) will be used to help identify the most important points for analysis.

Reporting: A summary report will be done of observations for the Academic Council.

Utilization: Modifications of the Course Plan by developers, and final approval by Academic Council.

Procedure II: Formative Evaluation of the Written Medium

Evaluand: Draft versions of the Individualized Textbook or Study Guide (if some conventional textbooks are to be used). Several drafts will be prepared until the prototype version is obtained.

Evaluator: Special subject advisors, usually contracted externally, and instructional designers. If possible, small groups of students will act also as reviewers.

Audience: Course Development Team (Unidad Integrada de Diseño).

Criteria: The most important are Validation of Objectives, Content, and Instructional.

Strategy: Detailed review of the drafts by using an instrument, in order to assure that every key point is analyzed (see Appendix B).

Reporting: Mostly informal, in direct discussions with the course development team (Unidad Integrada de Diseño). There will be a final formal report by the reviewers, as a summary of their observations and recommendations.

Utilization: Decisions related to improvement of the materials.

Procedure III: Evaluation of the Audiovisual Products

Evaluand: Instructional programs in Film, Television, Slide-Cassette, or Audio.

Evaluator: Members of the course development team.

Audience: Instructional media producers.

Criteria: Content and Instructional, mainly.

Strategy: Observation and discussion of the program, questionnaire in Appendix D may be used to help discussion.

Reporting: Informal, direction discussion with the involved producers.

Utilization: Decisions related to improvement of the programs.

Procedure IV: Evaluation of the Instructional Settings

Evaluand: Instructional conditions that have been set for the implementation of the courses; usually they consist of arrangements of equipment, materials and facilities, plus some agreements with the persons who are going to supervise these environments.

Evaluators: Delegated supervisors that will travel from the headquarters of UNA to the Local Centers.

Audience: In general, the Institutional Managers category, which is responsible for the optimum functioning of the instructional environments. They usually gather in a "task force" committee called COINTE (for Comite de Integración). Also the Directive Council will receive a general view of the situation.

Criteria: Mostly Content and Instructional.

Strategy: Direct observation of the sites, by using a predefined checking table of elements that should be present in the instructional situation.

Reporting: The Coordinators of the Local Centers will be reported informally by the supervisors about the problems that have to be solved, and the Directive Council will receive a general report covering all the centers.

Utilization: Improvement of the instructional conditions.

Procedures V to VIII: Evaluation of the Teaching Activities

Due to the complexity of this stage, it is expected that at least four procedures will be required in order to cover the whole process, namely:

V. Student Survey on the Written Materials.

VI. Advisor Survey on the Written Materials, Instructional Conditions and Audiovisual Media.

VII. Student Survey on Audiovisual Media.

VIII. Student Survey on Advisor's Performance.

Some of the elements in these procedures are common, then a unique table will be used for defining them.

Procedure:	V	VI	VII	VIII
Name:	Student Survey 1	Advisor Survey	Student Survey 2	Student Survey 3
Evaluand	Written Materials	The Whole Teaching Activities	Audiovisual Media	Advisor's Performance
Evaluator	Students	Advisors	Students	Students
Audience	-Course Development Teams -Advisor -Students	-Course Development Teams -Advisors -Students	-Course Development Teams -Advisors -Students	-Course Development Teams -Advisors -Students
Criteria	Impact, Instructional, Content and User	Instructional and Cotent	Impact, Instructional, Content and User	Impact, Instructional, Content and User
Reporting	Formal. The reports must be prepared by the members of the evaluation unit and sent to each audience group, with specific recommendations for the group.			
Utilization	In general, the results of evaluation will be used for the improvement of instructional materials and teaching activities.			

Procedure IX: Evaluation of Assessment Activities

Evaluand:	The assessment activities that form part of the courses. These are intended for measuring the achievement of learning objectives by the students. They involve several strategies, like multiple-choice tests, essay tests, papers, practical assignments, projects and supervised on-the-job training.
Evaluator:	The personnel of the Academic Evaluation Unit.
Audiences:	Course Developers and Institutional Managers, mainly.
Criteria:	Content and Instructional

Strategies: Here, two kinds of evaluations may be performed. In the first place, the observation and control of the administration of the assessment procedures, in order to determine if they are implemented as expected, this requires direct visits of the personnel of the Evaluation Unit to the Local Centers in the critical moments. In the second place, there are the techniques for tests and item analysis, in order to determine statistical indexes of reliability, validity, difficulty, discrimination, pre-test/post-test ratios, and others. These will be performed with the help of the Computer Services of UNA.

Reporting: Reports on the first type of evaluation (on the administration of assessment) will be immediate to the Coordinators of the Centers and to the involved Institutional Managers in the Headquarters, this may be done in the form of brief memoranda. The second type of evaluation (statistical analysis) requires the accumulation of considerable amounts of data in order to be useful; these activities may be performed on a standard operation basis, and the course developers may be reported informally by explaining them the tables of data and analyzing the alternatives of decision-making.

Utilization: Corrections in the assessment procedures, in order to assure trustworthiness and uniformity. Changes in tests, items and other assessment procedures as a result of the statistical analysis.

Procedure X: Summative Evaluation of the Programs

Evaluand: All the academic programs of UNA, represented in the courses produced or implemented at the period in which the evaluation is performed.

Evaluator: The Academic Evaluation Unit.

Audience: Authorities and High-Level Representatives and Institutional Managers.

Criteria: All the criteria defined in this chapter (Pages 89 to 100) are applicable; however, some of them will be emphasized: Impact, Validating Criteria, Cost/Effectiveness, User.

Strategy: Analysis and integration of the evaluative information available from previous stages, plus other documents that bear on relevance for program execution in UNA.

Reporting:	Formal. A global report must be elaborated of the performance of the academic programs. A yearly frequency is recommended for such reports.
Utilization:	Decisions on general policies for the institution, presentation of statements of accountability to external institutions, presentation of information to the public through the mass media, decisions on continuing, remaking or terminating courses, input of evaluative information for budgetary planning. Some other uses will appear on the way.

Organizational Support

Apparently, it is not necessary to create any new organizational unit in order to develop the CES, because all its functions can be accomplished just by assigning new tasks to existing units. This section has the purpose of presenting an analysis of the changes that are required in those units, and then discussing how these units may be connected by an information net with the users of informative evaluation.

In the first place, it must be acknowledged that the global operation of the CES will depend upon two axes: the Academic Evaluation Unit and the Coordination of Local Centers. The first one will be in charge of defining and permanently actualizing the procedures of the system, managing the evaluation records, and presenting global reports. The second one, will be in charge of managing most of the application of the procedures, because the largest amount of data is to be collected in the Local Centers.

The Evaluation Unit needs to make a redefinition of its functions, because in this moment it is almost completely concentrated in coordinating the assessment of students. This function has to be kept into the Unit because of its crucial importance for the institution, and because this Unit has the best prepared people for accomplishing the necessary tasks.

Perhaps the best way that the Evaluation Unit may find in order to evolve toward a broader role is to concentrate that function in one sub-unit, and then create new sub-units for the operation of the CES. The most immediately needed sub-units are a Coordination Unit of the CES and an Information Management Unit. It is important to delineate here the functions of those sub-units.

The Coordination of the CES will be in charge of designing the policies, plans, procedures and instruments required for the operation of CES. These have to be actualized permanently. It also will deal with the orientation and training of the personnel that participates in the operation of the system. This personnel belongs mostly to the Local Centers, or to other institutions (i.e., the technical advisors for the design and production of instructional materials). This sub-unit will be a permanent force for the development and change of the CES.

The Information Management Unit will deal with the highly technical problem of storing and processing evaluative information by using systems that allow for rapid retrieval. These tasks, sooner or later, will require computer support due to the large amount of data that will be accumulated. It may be studied whether it is necessary to create this sub-unit as a branch of the Evaluation Unit, or it may be allocated in the Information Center that serves the whole university. In either case, this sub-unit has to be permanently in interaction with the

Evaluation group.

On the other hand, the Coordination of Local Centers does not have right now people specialized in the area of evaluation, but they have to contract that kind of personnel in the future. It is necessary a couple of peole that makes the interface between the Evaluation Unit and the Centers. They have to act mostly as supervisors of the adequate application of the procedures. They have to make effective the implementation of the yearly plans of evaluation by communicating constantly with the Centers and giving instructions and advice to the Coordinators of Centers.

If UNA can achieve an efficient operation of the supporting units and sub-units here delineated, it may be thought that the whole system may be connected by an information net, whose key components are depicted in Figure 8. This net will provide a cyclic and self-correcting exchange of information among the units. The operation of this cycle may be summarized as follows:

(1) The Coordination of CES presents evaluation plans, procedural norms and evaluation instruments in order to provide guidance for the evaluation activities.

(2) The Coordination of Local Centers transforms these plans and norms into instructions for the Centers and maintains a surveillance of the application of the procedures.

(3) The Local Centers apply evaluation strategies and report data to the central level.

(4) The Coordination of Centers collects and, if necessary, summarizes those data and sends them to the Evaluation Unit.

(5) The Information Management Sub-Unit receives data and performs analysis on them.

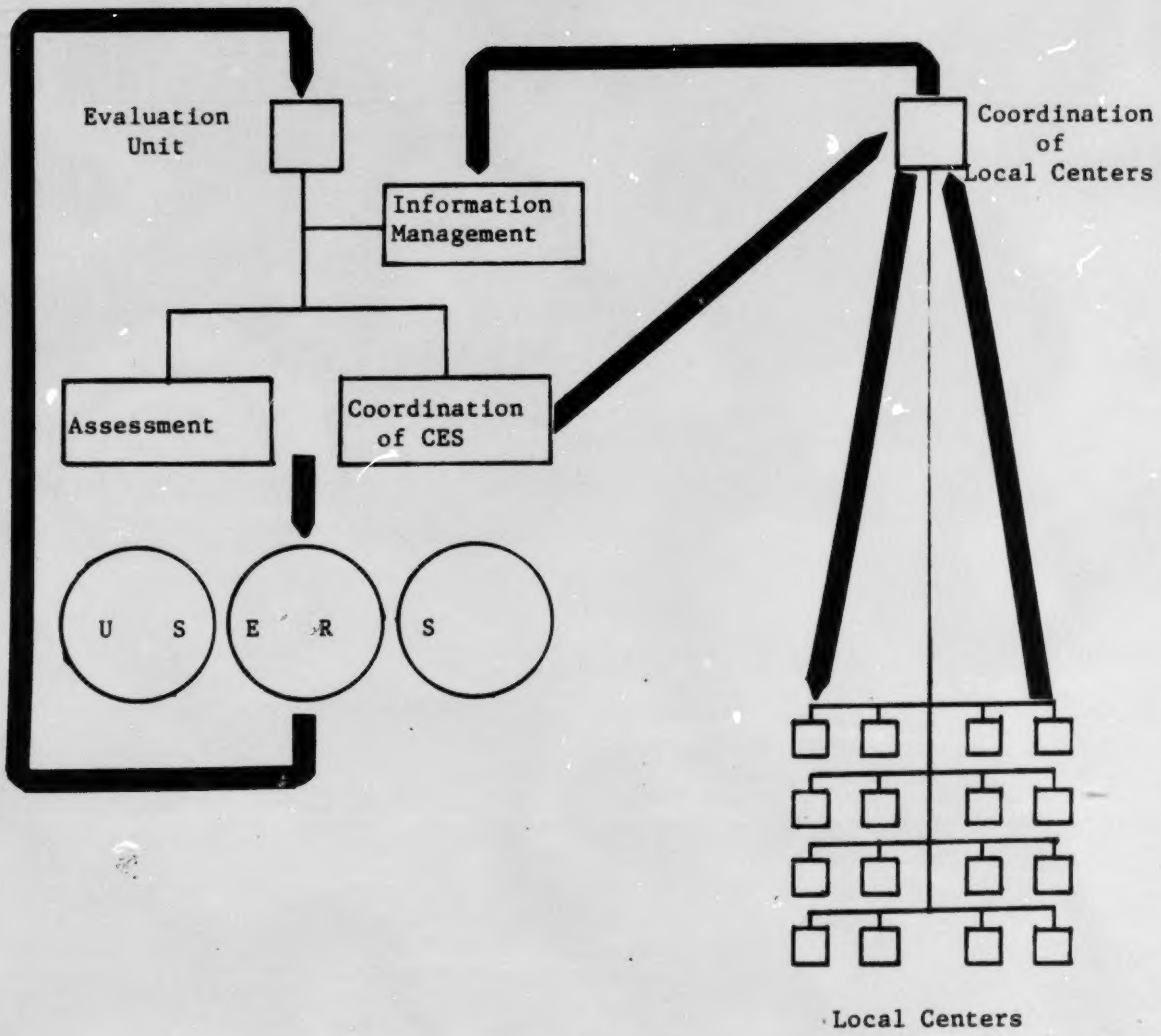
Evaluation Unit
Information Management
Assessment
Coordination of CES
U S E R S
Coordination of Local Centers
Local Centers

Figure 8: Schematic Representation of the Information Network.

(6) These analyses will be the basis for elaborating reports that will go to the audiences or users of evaluation.

(7) These, in turn, will provide feedback to the Evaluation Unit in order to redefine objectives, criteria, procedures and instruments.

The design of this network has to be refined in the future by determining the cycle for each specific type of information (i.e., responses to a survey or written materials) by asking: where is the need originated, who defines the procedure for obtaining the information, who applies it, who supervises, etc.

Guidelines for Evaluation Reporting

The critical factor that determines the success or failure of most evaluation studies, is the way by which the evaluator makes available evaluative information to his/her audience. Here is included not only the reporting activity, but also the kind of relationship that is established with the audience.

This section of the paper summarizes some key principles that the evaluator has to take into account, in order to make more effective communication with the audiences. For each one of the principles, specific remarks about how it applies to the context of UNA will be given, and at the end of the section the role and forms of evaluation reporting at this university will be discussed.

The leading idea that evaluators have to make their own in the implementation of the CES is that evaluation as defined here is an interactive process. This claims for an active role of the evaluator in seeking to share problems and points of view with the audiences, and not that of posing as an uncontaminated and uncompromised judge. This means that the user too has to be encouraged to be involved in evaluation concerns, by showing him that he can have real benefits from evaluation. The evaluator, then, has to see himself as a facilitator that allows the audiences to clarify their information needs in order to get the best of their performance. In the context of UNA, the evaluators should try to transform themselves into expert non-directive interviewers, which means people able to arouse a free dialogue in which the potential audience discusses its concerns, and then receives feedback from the evaluator about how the evaluative information can be helpful.

This interactive characteristic of evaluation demands an extraordinary ability to manage dissenting points of view, because the evaluator will find, in confronting several audiences, that each one of them has different opinions on crucial issues. It may happen, even, that each one has well founded reasons to maintain its position. Here the role of the evalutor is to provide data in order to clarify the options in relation to the points of dissent, and try to achieve a compromise solution. If it is not possible, and someone has to make a decision in conditions of uncertainty, then the evaluator must present the ways of obtaining feedback about the consequences of that decision. One more point has to be considered in this respect: the evalutor cannot ignore any of the opinions, he has to recall them all; it may happen that some idea that was rejected today emerges tomorrow as "the solution" to a problem. This is very frequent in innovative institutions like UNA.

In addition to this ability to sail among dissenting opinions, the evaluator has to have that of speaking according to the public, in the sense of presenting to each audience the information that it needs, and in the best form that it can understand that information. It makes little sense, for instance, to present to a team of course developers the statistical data of the application of their course to five cohorts of students; they must be explained the meaning of those data in terms of adequacy or inadequacy of the course materials. Conversely, if the same information is going to be presented to the students, they would like to know mostly the level of difficulty of the course and which parts of it require the most attention.

Another quality to be developed by an evaluator is an openness toward unanticipated results and/or uses of evaluative information. This may be termed "a relative freedom from the scheme," in the sense that he should look with naivety to unintended phenomena that occur as a consequence of evaluation--i.e., increase in the frequency of meetings of the Institutional Managers. These phenomena may reveal a lack in the CES, or they may be used as input in order to improve procedures.

Along the same line of thinking, the evaluator has to realize that program actions may seemingly contradict or misinterpret evaluation suggestions, yet decision makers may be still acting rationally within premises that differ of those of the evaluator. For that reason he cannot simply complain that evaluation was ignored. Istead of that, he must look for the courses of those actions, and see if they may be relevant for changing some aspect of the evaluation system.

A special remark has to be pointed out on the sensitive character of most evaluative information. Evaluation happens to tell the people that they are wrong or at least that they are not quite correct; this usually causes discomfort. There are a few rules that the evaluator can use to manage these kinds of problems. In the first place, maintain a good rapport with the audiences, particularly with those who are the same organizational level as the evaluator--they will be the most sensitive. In the second place, use carefully the top-to-bottom approach for communicating results and suggestions to the organizational levels; usually it is preferable to use a bottom-to-top approach, meaning that the subordinates know the evaluation and the suggestions before the superiors. In the third place, do not personalize errors or flaws--i.e., "apparently in the Local Center of XXX the advisors in the Area of Mathematics have frequent conflicts with the students"; instead of that, specify the point of the problem, the exact origin of the information and ask for additional details when necessary: i.e., "most of the students in the Center of XXX answered in the questionnaire that they had "troubles" with the advisors in the area of Mathematics, it is necessary to investigate to what kind of situations they are referring; an opinion of the advisors is suggested."

Finally, evaluators must acknowledge the cumulative character of their task. An evaluation system like the CES demands patiently accumulating information in small steps, in order to be able to use it later for broader applications. This perspective of the future of the system has to be kept always in mind, and used as an encouraging incentive for performing little, repetitive and precision-demanding tasks like designing instruments, analyzing responses, summarizing data in tables, and so on.

In the former paragraphs some general principles of interacting in an evaluation system have been discussed; as logical sequencing of that it is convenient to analyze now the specific ways of communicating the evaluative information by means of reports. This is a crucial aspect for any evaluation in order to be effective; however it is frequently neglected in educational settings. For instance, some evaluators feel that they do not have to explain data to audiences, because "the data should speak for themselves" or "the audiences should know what to do with them." Another frequent error is to report interminable listing, tables, indexes, and so on without really presenting relevant conclusions to the audiences. In order to avoid this and other kinds of faults, the evaluator should work with perseverance in the art of good reporting.

Using a practical approach, the reports the evaluators have to elaborate in the CES may be classified into three types: summative, particular, and user reports. These are not true categories but short-hand terms that can be useful for identifying different models of reporting. Summative reports will be those that intend to cover the whole activities of a program orseveral programs in a span of time of about one year or more; they are usually intended for policy decision-making. Particular reports will deal with a course, a module or even a specific instructional material, they are generally intended for improving processes and products. User reports are those communicated to actual or potential students. They may be global or specific, but their language is different from that of the other types. These differences will be analyzed later.

It is important to note that the same information can be used for different kinds of reports, but the way of presenting it varies according to the audience. For example, grade averages are interesting data for many audiences but not in the same sense for all of them. In a summative report averages may appear as one of the indicators of general effectiveness of the courses; in a particular report they will be used to point out difficulties in the instructional materials; finally, in a user report they may be presented as a point of comparison for encouraging the students to obtain better results. A description follows of the structure and language of each type of reports.

Summative Reports

Summative reports are nearly always written. They are intended usually to be used by top or middle level decision-makers who, in the scheme of audiences of this paper,[53] correspond to the Authorities and Higher Representatives, and the Institutional Managers. It would be desirable that one summative report about all of the courses in production on operation were presented yearly by the Evaluation Unit; the most appropriate time for that report is around June or July, when the specific planning and budgeting for the next year is initiated.

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[53] For an analytical description of the audiences of the CES, see pages 24 to 31.

This summative report will be the basis for other communications that the Evaluation Unit may address to the audiences according to their specific interests.

Since the summative report is used by people with many responsibilities and very busy schedules, it is convenient to divide it into two parts: a summary and a general report.

The summary part will present the major conclusions of the evaluation and the main suggestions for decision-making based on those conclusions. A suggested organization for this part may be the following:

Summary (Typical Content)

1. What was evaluated?
    - Period of the evaluation.
    - List of courses in design/production phases (per program).
    - List of courses in development phase (per program).
2. Major conclusions.
    - About institutional goals.
    - About program goals.
    - About instruction.
    - About student assessment.
3. Recommendations
    - About general policies.
    - About organizational aspects.
    - About the course materials: continue, modify, replace, terminate.
    - About the administration of instruction.
    - About student assessment: design and administration.
    - About student needs and significant changes.

The general report will contain the detailed information on which the summary is based. Typically it will be formed by a succession of tables and graphs with brief comments about their meaning, and the conclusions that were drawn from them. An adequate structure for this report may be the following:

General Report (Typical Content)

1. Method: brief description of the procedures used to obtain the information--i.e.: how many questionnaires were applied for each course, what kind of data were processed.

2. Results of outcome measurements: average of achievement in the courses, classification of courses according to difficulty, number of continuing students, number of dropped students, and so on.

3. Results of implementation measurements: most frequent positive and negative opinions of users for each course, opinions about advisors, special problems found in implementation, satisfaction of users.

4. Informal results: summary of anecdotal accounts that may be relevant for the evaluation of the courses. This may be based on the so-called "scream evaluation": what problems caused the users or administrators to "scream."

5. Current state of the instructional and assessment materials: balance of what is done and what is not done, classification of the materials according to a scale of the amount of revision that they need , qualitative appreciations of the courses.

6. Cost and Benefits: costs associated with the programs, benefits associated with the programs (economic and non-economic). This section has to be prepared with the help of the administrative units.

Partial Reports

These may be written or oral; in the last case they may be complemented with handouts of raw data. They have to be tailored to different audiences, mainly institutional managers, course developers and advisors of the local centers. As their purpose is usually to influence an ongoing process (formative evaluation), they do not have to be very elaborate in form, but point to the essential observations and related suggestions. It is convenient to conceive of them as pieces for discussion; as something provisional that may help the evaluators and audiences to interact.

As these reports are highly variable, it is impossible to establish a regular structure for them. However, they must contain at least the following information.

1. What was evaluated?: what product or process.
2. How was it evaluated?: method, type of instruments.
3. Major conclusions: results of the observations.
4. Suggestions: alternative courses of action.

User Reports

As the students in UNA are dispersed, it is convenient for the user reports to be in written form. This is the best way to distribute them and to assure reception. The student reports may be particularized to each one of the Local Centers, because the audience does not need to know what is happening in all the centers.

In reporting to students, a lot of the technicism that characterizes evaluation has to be put in abeyance for a while. The evaluator must see himself as an educator who tries to transmit to his audience something useful for its learning. Then, the proper style is that of guidance: to clarify the problems that appear in the evaluation, and to show the courses of action or resources that can be used to overcome these problems.

A typical structure of a user report may be the following:

Student Report (Typical Content)

1. Objectives of the evaluation: what is the purpose of the Evaluation Unit with presenting those results to students?
2. Grade averages in the courses of the students of Local Center XXX, as compared with national averages.
3. Most frequent observations about the courses and recommendations for improving results; emphasis on "problem" courses (those which have higher rates of repeat or attrition).
4. List of available resources that the student can use for each one of the courses.

This kind of report should be presented to the students at least twice a year, and the most appropriate moment is some weeks before the integral exams. These are placed at the end of the semester, and the student can recuperate in them the learning objectives that were not "earned" in the partial exams.

A Checklist for Appraising the Operation of the CES

The purpose of the present checklist is to serve as a self-evaluation control for the developers of the CES.[54] The items in the list correspond to several aspects of the CES model analyzed in this chapter, but the order of presentation has been slightly altered in respect to the sequence of sections and sub-sections. Evaluators may find it useful to review the implementation of the CES at least twice a year by using this checklist. It will help them to assess to what extent the design of the system is operating or not, and decide accordingly the next courses of action in order to improve the system. Along that process, the items in the list may be rephrased, increased in number, or new categories may be added; it is essential to keep the checklist updated to the current state of development of the CES.

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[54] This checklist has been largely inspired by one of Robert D. Brown and Larry A. Braskamp, Common Themes (of Evaluation) and a Checklist, appearing in Utilization of Evaluative Information (San Francisco: Sage Publications, 1980, pages 91 to 97), however many of the items have been rephrased to fit the characteristics of the CES. In addition, the items in parts C, D, E and F are new.

A. Evaluator's Role

1. Assess the level of congruence of evaluators with the Institutional and Program Goals. If any discrepancies, define the actions to achieve congruence or to introduce the needed changes in Goals.

2. Assess the level of interaction of the evaluators and the Evaluation Unit with the audiences: are they perceived as interactive?

3. Analyze the activities accomplished in the different aspects of the evaluator's role: data gatherer, expert, consultant, information provider, educator, non-directive interviewer, and problem analyst. Are they performed as expected? What major improvements should be done? Are the skills of the evaluators sufficient to meet the complexities of these role behaviors? Is some training necessary?

4. Establish congruence between personal role perception (data gatherer, expert, consultant, information provider, educator, non-directive interviewer, problem analyst) and audience expectations.

5. Assess the implications of evaluation in political issues, and in decisions that affect personnel.

B. Planning the Evaluation

6. Analyze the year and semester plans of the Evaluation Unit: Are they being accomplished? Are they accurate? Do they cover the scope of unmet needs?

7. Determine in the evaluation plan provisions for exploring unintended outcomes and external sources of information.

8. Ensure that information-providing activities in the evaluation plans are set in appropriate time for the key decision events.

C. Organizational Support

9. Ensure that sufficient technical skills, time resources, and personnel are available to conduct the kind of activities demanded by the implementation of the CES.

10. Ensure that the Evaluation Unit has enough capability in its sub-divisions (Student Assessment, CES Coordination, and Information Management) in order to cope with the volume of tasks of the CES: Are there other alternative ways of support? Are there required some special facilities or services (i.e., computer)?

11. Ensure a solid linkage between the Evaluation Unit and the coordination of Local Centers for the implementation of the evaluation strategies and the part of the information reporting that corresponds to the local level.

12. Verify that all the people involved in the CES, inside and outside the Evaluation Unit, have a clear knowledge of its role in the system. Make provisions for training if necessary.

13. Verify that the top-level executives of the University have a clear knolwedge of the structure, functions and perspectives of development of the CES.

14. Ensure that the information network of the CES is operating properly, which means that the expected information is going through the adequate channels. Observe the transactions among the different components of the network: Users-Evaluation Unit-Coordination of Local Centers-Local Centers.

D. Determining Information Needs

15. Identify the decision makers and other potential users of the evaluation information within and outside the organization: Do they correspond to the defined audiences of CES? Is is necessary to create new audience categories?

16. Ensure that the kind of information provided to the audiences is what they need for their work.

17. Discuss with the audiences what troubles or disturbances they have in their activities, and how evaluation can contribute to help them solve those troubles or disturbances.

18. Discuss with the audiences alternatives for improving the current way of reporting information of the CES.

19. Adapt evaluation plan to changing information needs.

E. Evaluation Criteria

20. Review the listing of criteria used in the CES, and analyze whether it is necessary to rephrase, add or eliminate any criterion.

21. Ensure that the evaluation criteria have been clearly operationalized in the construction of evaluation instruments and/or strategies. Is there a sustained effort in the people of the CES for transforming vaguely stated criteria into operational definitions that allow for measurement?

22. Do all the members of the Evaluation Unit know and use permanently the set of criteria of the CES? Have they internalized the importance of those criteria?

23. Discuss the listing of criteria with members of the evaluation audiences, external experts in evaluation, curriculum developers and other people that can contribute to refine the criteria.

F. Evaluation Strategies

24. Involve representatives of potentially affected groups in making decisions about the instrumentation of evaluation procedures and the identification of relevant data sources.

25. Be accessible to internal and external staff of the CES during the evaluation to learn of and shape perspectives from which each is interpreting the information.

26. Ensure that the application of evaluation procedures is not transformed in overduty for the staff. Ensure that the data sources (i.e., students) are requested information with appropriate frequency: not so often that they get annoyed.

27. Collect data from multiple sources. Include questions in the evaluation strategies that allow obtaining not only planned but also incidental information.

28. Make sure the data collection instruments and procedures are understandable and relevant.

29. Whenever possible try to systematize the evaluation strategies and procedures by the use of instruments and/or formats that provide uniformity to the sets of data.

G. Communication of Evaluative Information.

30. Make the reporting of evaluation information a periodic process; try to create regularity in reporting matched with decision events.

31. Ask program staff, especially those most affected, to assist in interpreting the findings.

32. Communicate major findings when available and considered appropriate; do not wait for the formal report deadlines.

33. Write different reports for different audiences: match information with needs, style with mode of reception, and suggestions with intended uses.

34. Make reports and presentations and reports understandable and easy to follow, keep technicisms for inside talk in the Evaluation Unit. Keep written reports as brief as possible and action oriented.

35. Make sure that all audiences receive the evaluative information in sufficient time prior to key decision-making events.

36. Use several media for presentation of information: slides, charts, recorded interviews, handouts, simulations, and others.

H. Use of Evaluative Information

37. Understand the policy-making process of the organization; identify political, technical and administrative factors influencing decision-making.

38. Determine which decisions and policies are made as a result of the evaluations; communicate the outcomes of those decisions and policies on evaluation reports.

39. Determine which staff and other users should be consulted as the evaluation is planned and conducted.

40. Trace the path and impact of previous evaluations in the same setting and determine how this affects this evaluation.

41. Try to publish the most relevant information results, in order that they are known by a large number of potential audiences.

42. When evaluation is not used, discuss with audiences the pros and cons of the evaluation strategies, and whether they need some changes in order to be most appropriate for users.

Recommendations

The initial purpose of this paper was to present the structure and operational guidelines of an evaluation system for the National Open University of Venezuela (UNA), therefore the whole Chapter III may be conceived of as a recommended model; it can be studied, evaluated and eventually implemented in that University. As the description of that model has been discussed with certain detail, no further comments will be included here. The recommendations section will focus, then, on the activities that UNA should execute in order to facilitate the implementation of the CES.

In the first place, the content of this proposal should be discussed at different levels in the organization. An appropriate way of initiating that discussion may be through an institutional seminar, held by the Evaluation Unit. In this seminar would participate the key members of the personnel that would deal with the implementation and/or utilization of the CES: Staff of the Evaluation Unit, Coordinators of Academic Areas and Sub-Programs, Staff of the Coordination of Local Centers, Coordinators of Local Centers and others. They will analyze and enrich the model of this paper by adding aspects of their personal experiences. In a second stage, the modified model of the CES would be presented to decision organisms as the Academic Council and the Directive Council, in order to attain the official approval for implementation.

However, it is not necessary that the whole evaluation model is approved before the Evaluation Unit can start to develop some aspects of it. Indeed, there are already in that unit some activities in progress that must be strengthened. For instance, the development of instruments for evaluating course materials, and the experimental application of those instruments in some Local Centers must go on. This is the best way of accumulating experience in order to be able to undertake greater tasks in the future.

On the other hand, the Evaluation Unit must begin to modify rapidly its structural and functional characteristics, by adapting them to the new function of centralizing and coordinating a general evaluation system for UNA. This involves changes in the role behavior of the evaluators. Instead of being merely advisors of the course development teams in the elaboration of assessment instruments, they will have to undetake the responsibility of designing and carrying out the evaluation of the courses and managing the evaluation information. It would be convenient to initiate a training program for this people, in order to enable them for the more complex role that they will have in the future: consultant, information provider, educator, nondirective interviewer, problem analyst, and so on.

It is necessary also to create dependable channels for evaluative information exchange between the Coordination of Local Centers and the 20 centers scattered throughout the country. This, perhaps, is the most difficult task due to the magnitude of the operation. In order to prevent large amounts of error in the transmission of information from the Coordination to the centers, and vice versa, the reporting procedures will have to be clearly defined, and the reporting formats must be specified. Here also it is necessary to use training programs, in order to ensure that everyone involved in the evaluation and reporting procedures is able to execute his tasks in the CES.

Finally, it is convenient to schedule into several stages the development of CES, instead of trying to execute all its activities at once. The proper priority sequence for developing the CES may be the following: in the first place, ensure the organization of all the evaluation that is performed in the Central Headquarters of UNA--this involves the Course Plans and the review of the instructional material by experts' secondly, develop the evaluation that is performed in the Local Centers--evaluation of instructional activities (use of written material, use of complementary media and advisory); in the third place, develop those evaluation tasks that are based on a coordination between the headquarters and the Local Centers--i.e., evaluation of instructional settings and summative evaluation. This sequencing allows for graded increases in the complexity of the evaluation tasks, by using in each new stage the experience accumulated in former stages.

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APPENDIX A

THE NATIONAL OPEN UNIVERSITY
ACADEMIC VICE-RECTORATE
EVALUATION UNIT

DATE: / / / COURSE: ________
________ PROGRAM: ________
____

QUESTIONNAIRE FOR THE EVALUATION OF COURSE PLANS

This questionnaire is intended to help technical committees to evaluate Course Plans. It is expected that the committee reviews each one of the questions related to the different sections of the plan, and also adds some other questions from the experience of the committee members. At the end, a general valuation of the Course Plan is required for purposes of decision-making.

1. Rationale of the course
   a. Adequate explanation of purposes.
   b. Adequate explanation of importance of this course for the program.
   c. Adequate evaluation of relations between the course and the attitudes, knowledge, abilities and/or skills that it is supposed to help develop.

2. Course Objectives
   a. Clear in their presentation and wording.
   b. Represent truly evaluable outcomes.
   c. Satisfactory from the point of view of the desired profile of the graduate.
   d. Appropriate coverage of the knowledge, attitudes, abilities and/or skills that the course is supposed to help develop.
   e. Satisfactory from the point of view of social relevance.
   f. Appropriate from the point of view of the entry level of the student; they are an achievable goals.

3. Course Content
   a. Knolwedge involved in the course is scientifically valid.
   b. The course is up-to-date in respect to advances in science and technology.
   c. The structuring or sequencing of content is logical and well connected.
   d. The methodological approach of the course is scientifically correct.
   e. The subject matter is covered in appropriate detail and depth.
   f. Applications of the knowledge to the typical contexts of the professional life are clearly indicated.

4. Module/Unit Structure

   a. The sequence of Modules and Units within each Module is appropriate.
   b. The information load of Modules and Units is appropriate in respect to the time available for the student.
   c. The Units represent approximately equal weights in the sense of the amount of work required to study them.
   d. The amount of time required for each module is correctly calculated and it corresponds to the credit value of the course.

5. Student Assessment Plan

   a. The assessment plan is feasible according to the conditions of operation of the Local Centers.
   b. The assessment plan allows all the objectives of the course to be evaluated.
   c. The assessment strategies match the level of difficulty and the area of behavior of the objectives.
   d. The weights assigned to the different evaluation strategies in the global score of the student are proprotional to the importance of each strategy.
   e. If special provisions in the Local Centers are needed for the assessment in this course, they have been taken into account.

6. Inventory of Instructional Resources
   (Includes: Instructional and Assessment Materials, Advisory, Library Resources.)

   a. The planned instructional resources for the course are sufficient to promote the desired learning objectives.
   b. The planned instructional resources for the course are available or feasible in the current circumstances.
   c. The instructional resources allow for an intense and varied practice of the students.
   d. When some of the resources are not easy to provide for all the centers, alternative resources have been indicated.

7. Program of Course Design and Production

   a. The design and production strategy that has been chosen (i.e., original production or adaptation of existing materials) is the one that presents most advantages for UNA and for the students.
   b. The time scheduling for course design and production is realistic in view of the personnel and resources available.
   c. The costs of design and production of the materials are congruent with the standards established in the administrative policies of UNA.

Rating

Rate from 1 (poor) to 5 (very good or excellent) each one of the aspects of the Course Plan that have been considered:

Aspect	Rating
Rationale of the Course	
Course Objectives	
Course Content	
Module/Unit Structure	
Student Assessment Plan	
Inventory of Instructional Resources	
Program of Course Design and Production	

Most important positive or negative observations on the Course Plan:

Suggestions (Mark X)

Develop Plan ☐ Minor Changes ☐ Important Changes ☐ Rewrite ☐

Other:

Name and Signature of Evaluators:

APPENDIX B

THE NATIONAL OPEN UNIVERSITY
ACADEMIC VICE-RECTORATE
EVALUATION UNIT

QUESTIONNAIRE FOR THE EVALUATION BY EXPERTS OF TEXTS AND STUDY GUIDES

The purpose of this questionnaire is to provide some guidelines to the content and instructional design experts for the review of the written materials produced in UNA. The questionnaire should be used as a reference when the drafts or final versions of the materials are analyzed; after that process it is required that the team of reviewers presents a report per module on the established report format. Ask the secretaries of Academic Areas for copies of that format.

1. LEARNING OBJECTIVES OF THE MODULE

a. Are they clearly specified and understandable?
b. Do they correspond to what is expected of the course according to the curriculum?
c. Are they evaluable by means of feasible strategies?
d. Do they have an appropriate level of complexity for the student, not too low nor too high?
e. Do they correspond to a sequence of graded learning achievements according to a sound taxonomy of objectives?

2. INFORMATION CONTENT OF THE MODULE

a. Is it scientifically correct, there are no errors or misinterpretations?
b. Is the information up-to-date and is it based on sound sources?
c. Is the subject matter covered in appropriate extension and depth?
d. Has a method for presenting information been used consistently: inductive, deductive, problem-solution, case study, analysis of literature, etc.? Is it appropriate?
e. Has a method for analyzing the conceptual structure of the subject matter been used consistently: conceptual maps, task analysis, matrix analysis, Ruleg, or other?
f. The key points of content are clearly differentiated and stressed?
g. Have there been presented, if relevant, practical applications or examples of the concepts and principles being discussed?

3. INSTRUCTIONAL QUALITY OF THE MODULE

a. Is there a corespondence between objectives, content, suggested learning activities and self-evaluation?

b. Are objectives matched with entry behavior of students? If not, are there remedial activites in order to achieve the desired entry level behavior?

c. Is the sequence of content the most appropriate to facilitate learning?

d. Is the amount of new information per Unit paced in proportion to the rate of advance for a normal student?

e. Check for the use of the following elements that facilitate learning from texts:

Advance Organizers
Redundancy
Encouraging Words
Prompting Aids
Graphs, Schemes
Examples and Counter Examples
Summaries
Rhetoric Questions
Feedback to Questions

f. Does the instructional material demand activity from the student, or is it made mainly for memoristic learning?

g. Do the self-evaluation questions provide for an adequate review of all the objectives?

h. Is the style of the self instructional test clear, fluid, and interesting?

i. Are there opportunities for different "branching" of the Units or lessons according to the interest and level of previous learning of the student?

j. Are there suggestions for complementary activites of the student like use of other media?

4. PRESENTATION OF THE TEXT

Check for the adequacy of the following aspects:

a. Clarity of printing.
b. Good definition in images.
c. Good separation of paragraphs.
d. Appropriate framing or underlining of important information.
e. Use of color in images.
f. Good differentiation of the parts of the text.

APPENDIX C

THE NATIONAL OPEN UNIVERSITY DATE: / / / COURSE ____________
ACADEMIC VICE-RECTORATE MODULE ______________________________
EVALUATION UNIT NO. OF UNITS ________________________

STUDENT QUESTIONNAIRE FOR THE EVALUATION OF TEXTS AND STUDY GUIDES

The purpose of this questionnaire is to obtain valuable information for the improvement of UNA learning materials. Before proceeding to fill it out, you should have read thoroughly the text or study guide. When you answer it, please try to express frankly your opinions, they are a very important source of information for us.

1. Place a check mark in the space provided for each one of the following items that is included in the module you have read.

   Learning objectives.. ( )
   Pre-requisites for learning activities.......................... ( )
   Reading material for the learning activities.................... ( )
   Explained or commented bibliography (do not mark if not commented) ( )
   Technical Glossary .... ( )
   Content outline for the module or each of one of the units..... ( )
   Suggestions for the use of complementary media or activities... ( )
   Self-Evaluation Test or Exercises............................... ( )
   Answers to self-evaluation...................................... ( )
   Complementary Appendix.. ( )

2. Indicate your general opinion of the study guide or text on each of the following aspects:

   Key: E = Excellent, G = Good, F = Fair, I = Inadequate, P = Poor

	E	G	F	I	P
Logical sequence of content..........................	_	_	_	_	_
Usefulness of information (for your learning)........	_	_	_	_	_
Clarity of the presentation form.....................	_	_	_	_	_
Adequacy of self-evaluation activities...............	_	_	_	_	_
Graphic design and printing..........................	_	_	_	_	_
Usefulness of graphics and tables....................	_	_	_	_	_

3. Analyze the Learning Objectives by indicating their value to you in relation to the following characteristics:

	E	G	F	I	P
Utility as orientation for your learning.............	_	_	_	_	_
They give a general view of content..................	_	_	_	_	_
Complexity in relation to time available.............	_	_	_	_	_
Utility as orientation for your future evaluation....	_	_	_	_	_
They point out the most important aspects of content.	_	_	_	_	_

4. How would you rate the reading material of the module according to the following characteristics:

	E	G	I	F	P
The level of difficulty of the information...........	_	_	_	_	_
The sequencing of the units and topics...............	_	_	_	_	_
The amount of information with respect to time available...	_	_	_	_	_
The clarity in the explanation of key points.........	_	_	_	_	_
The motivational appeal of the readings..............	_	_	_	_	_
The amount of information in order to cover all the topics..	_	_	_	_	_

5. Finally, analyze the Self-Evaluation material and value it in relation to the following characteristics:

	E	G	I	F	P
It permits the evaluation of the learning objectives..	_	_	_	_	_
It covers adequately the content of units............	_	_	_	_	_
Questions are clear enough...........................	_	_	_	_	_
They tell you if you have learned properly...........	_	_	_	_	_
There are enough questions for a complete review.....	_	_	_	_	_

6. What additional observations or questions do you have on this Module? Please summarize your answer:

7. How many hours have you spend altogether on this module (including reading, self assessment, and watching audiovisuals)? Circle your answer:

Under 8   8-12   13-16   17-20   21-24   25-28   29 or more

8. How do you rate this module as compared with other materials you know have the same content?

Better than other materials.................................. ( )
Same as other materials...................................... ( )
Poorer than other materials.................................. ( )

Indicate references of the other materials that you know:

Do not sign the questionnaire; this information is confidential.

What is your program: ______________________ How many courses have you approved in UNA: ________ How many are you taking now: ________

APPENDIX D

THE NATIONAL OPEN UNIVERSITY
ACADEMIC VICE-RECTORATE
EVALUATION UNIT

QUESTIONNAIRE FOR THE EVALUATION OF AUDIOVISUAL PROGRAMS

The purpose of this questionnaire is to obtain valuable information for the improvement of the audiovisual materials of UNA. It is applied to the instructional programs on television, audio, or slide-tape. Please express frankly your opinions, they are very important to us.

Observer data: Student ( ) Advisor ( ) Course Developer ( ) Other ____ ________________. Sex: M ( ) F ( ). Center where you observed the program __________________. Are you familiar with the content of the program? Quite ( ), Fairly ( ), No ( )

Program data: Title ________________ _____ Medium: TV ( ) A ( ) ST ( )*
When was it observed? Before the reading( ); after ( ); during ( ).

REACTION TO THE PROGRAM

The following sentences describe the desirable characteristics for audiovisual programs; these sentences are accompanied by a rating scale in which you will value your reaction to the program in respect to the content of the sentence. Please circle the appropriate value in each case. When a sentence is not applicable to the kind of program you observed, do not mark any answer for that sentence.

Key:

5	4	3	2	1
Very Good	Good	Average	Insufficient	Poor

1.	Information is well organized in the program.	5	4	3	2	1
2.	Key concepts or ideas are sufficiently explained.	5	4	3	2	1
3.	Concrete examples are used in order to clarify key concepts and ideas.	5	4	3	2	1
4.	Language of the program is clear, understandable.	5	4	3	2	1
5.	The amount of new information is adequate to the time of exposure.	5	4	3	2	1
6.	Pauses are well used to allow for reflection.	5	4	3	2	1
7.	Images are appropriate to verbal narration.	5	4	3	2	1
8.	The program is interesting, motivating.	5	4	3	2	1
9.	The presenter acts well in front of the camera.	5	4	3	2	1
10.	The program could keep your attention all the time.	5	4	3	2	1
11.	The program is useful for clarifying aspects of the subject matter content.	5	4	3	2	1

---

* TV = Television; A = Audio; ST = Slide-Tape.

DETECTION OF FLAWS

A list of defects that may occur in an audiovisual program is presented. Please mark an "X" in the appropriate space for those defects that you have observed in the program.

- Music is not appropriate ( )
- Narration is too slow ( )
- Narration is too fast
- Voice of narrator is dull or inadequate. ( )
- Too much information on the screen. ( )
- Letter or number characters are difficult to read. ( )
- Images are not clear ( )
- Information is repeated too many times ( )
- There are artifact fails in in audio ( )
- The program in general is boring. ( )
- Graphics are too complex. ( )

OBSERVATIONS AND QUESTIONS

Is there any other observation or question you would like to add to your reaction to the program?

CHANGES

What kind of changes do you suggest for the program?

The whole program had to be remade. ( )
Content should be improved. ( )
Narration should be changed. ( )
Images should be changed. ( )
Technical aspects should be improved. ( )
No changes are necessary. ( )

x

APPENDIX E

THE NATIONAL OPEN UNIVERSITY
ACADEMIC VICE-RECTORATE
EVALUATION UNIT

STUDENT SURVEY OF THE LOCAL CENTER SERVICES

The purpose of this questionnaire is to obtain information about how students perceive the whole instructional environment of the Local Center. It is very important for UNA to know this information, in order to plan adequately the facilities and resources of the Centers. By answering this questionnaire you are participating in the design of your own conditions for learning and advancing in your career program; for that reason you are asked to make a complete and objective judgment on the questions that are presented here, your opinions are a very important source of information for the institution. Do not sign your name, the information in this questionnaire is confidential.

Student Data

(Mark "X" or fill in the blanks)

1. Local Center: ______________ City where the student lives ____________

2. Program in which the student is enrolled currently:

   Introductory Course ( ), General Studies ( ), Administration( ), Public Accounting ( ), Learning Disabilities ( ), Preschool Education ( ), Mathematics Education ( ), Industrial Engineering ( ), Systems Engineering ( ), Applied Mathematics ( ).

3. How many courses have you taken? __________ How many approved _____

4. Since what date are you in UNA? _-_-_. Have you been permanently a student since that time? Yes ( ) No ( ).

5. What is your age? _____ Sex: M ( ) F ( ). Married? Yes ( ) No ( )

6. Do you have a job? Yes ( ) No ( ). Dedication? Full Time ( ) Half Time ( ), Part Time ( ). Is this job related to any of the career areas of UNA: Yes ( ), No ( ). Which one? _______________

7. Do you live near the Center ( ), far from the Center ( ), at an intermediate distance from the Center ( ). How frequent are your contacts with the Center: daily ( ), almost daily ( ), weekly ( ), twice a month ( ), monthly ( ), sporadically ( ).

8. Today's Date: _-_-_. How many times have you filled out this questionnaire before: None ( ), 1 ( ), 2 ( ), 3 ( ), more than 3 ( ).

Evaluation of Center Services

1. ADMISSION AND ENROLLMENT

1.1 How do you perceive the promotion that UNA does in order to get applications from potential students?

Abundant ( ), Adequate ( ), Insufficient ( ), Poor ( ).

1.2 How was the last enrollment procedure in your center with respect to organization?

Well organized ( ), Fairly ( ), Deficiently ( ), Poorly ( ).

1.3 Did you have available all of the information you needed for your enrollment?

Yes ( ); No, some information was lacking ( );
Almost no information ( ).

1.4 How were the course materials delivered with respect to time?

With enough anticipation to the course start ( ),
Almost at the course start ( ), Later than the course start ( ),
There is still a lack of course materials ( ).

1.5 Did you receive complete instructions about the use of the materials when you received them?

Yes ( ); Some, but not all the necessary information ( ); None ( ).

Other observations: ____

____

2. ACADEMIC ADVISORY

Identify your advisors in your center by using the following key:

I - Introductory Course
G - Guidance
N - General Studies
M - Mathematics
E - Education
D - Industrial Engineering
A - Administration
C - Accounting
S - Systems Engineering

In the following questions use the key letters to indicate your opinion about each one of the advisors with whom you are interacting currently, do not include answers for past periods.

Example:

Does your advisor have problems answering your questions on the subject matter?

	No Problem	Does usually O.K.	Has problems
Your answer	(D)	(M)	( )

2.1 Does your advisor have problems answering your questions on the subject matter?

No Problem	Does usually good	Has problems
( )	( )	( )

2.2 Is your advisor available for consultation?

Almost always	Frequently	Not frequently	Is not available
( )	( )	( )	( )

2.3 How would you qualify the general conduct of your advisor with respect to students?

Very concerned with students	Concerned with students	Indifferent to students	Negative to students
( )	( )	( )	( )

2.4 How would you appraise the information you receive from your advisor?

Very useful	Useful	Insufficient	Deficient
( )	( )	( )	( )

2.5 What is the usual pattern of your contacts with the advisor?

Individual interview	Group interview	Class-type presentation	Group discussion
( )	( )	( )	( )

2.6 How would you appraise the way the advisor grades essay exams and papers?

Very dependable	Dependable	Relatively dependable	Undependable
( )	( )	( )	( )

2.7 How would you appraise the help you receive from your advisor for the realization of practical tasks and in-service training?

Very good support	Good support	Fair support	Inadequate support
( )	( )	( )	( )

2.8 How are the social relations of the advisor with the students?

Very good	Good	Fair	Poor
( )	( )	( )	( )

Other observations: ______________________________

____

3. LIBRARY SERVICES

3.1 Is your library well endowed with UNA/s textbooks?

Very Good	Good	Deficient	Poor
( )	( )	( )	( )

3.2 Is your library well endowed with textbooks other than UNA's?

Very Good	Good	Deficient	Poor
( )	( )	( )	( )

3.3 Is your library well equiped for presentation of audiovisual programs?

Very Good	Good	Deficient	Poor
( )	( )	( )	( )

3.4 Is there adequate information in your library about the regional institutions that can be of potential help to you?

Very Good	Good	Deficient	Poor
( )	( )	( )	( )

Other observations: ______________________________

____

4. FACILITIES FOR PRACTICAL LEARNING

(Do not answer if not applicable)

4.1 Is there adequate equipment or facilities in your Center or associated areas for those courses that require practical activities?

Very Good	Good	Deficient	Poor
( )	( )	( )	( )

4.2 How are the relationships ~~working~~ between your Center and the institutions that provide learning environments for the students?

Very well	Fairly well	There are difficulties	Poorly
( )	( )	( )	( )

Other observations: ______________________________

5. INFORMATION

By marking with an "X", show your appraisal of the information that you receive in your center with respect to the following issues:

	Issues	Very Good	Good	Deficient	Poor
a.	Curriculum of the program	( )	( )	( )	( )
b.	Courses already opened	( )	( )	( )	( )
c.	Courses to be opened	( )	( )	( )	( )
d.	Assessment schedules	( )	( )	( )	( )
e.	Assessment procedures	( )	( )	( )	( )
f.	Institutions in the region that may be helpful	( )	( )	( )	( )
g.	Study equivalencies	( )	( )	( )	( )
h.	Accreditation of experiences	( )	( )	( )	( )
i.	Vocational orientation	( )	( )	( )	( )
j.	UNA organization and function	( )	( )	( )	( )

Other observations: ____

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6. TESTING

6.1 Do you receive complete and precise instructions for your tests when you enter in presential exams?

Absolutely Yes	Usually Yes	Sometimes No	Usually No
( )	( )	( )	( )

6.2 Do you execute your tests in appropriate environments (quiet, good lighting, good desks, etc.)?

Very good environment	Good environment	Deficient environment	Poor environment
( )	( )	( )	( )

6.3 Do you receive opportune reports of your grading in the tests?

Always on time	Usually on time	Frequently late	Usually late
( )	( )	( )	( )

6.4 How would you appraise the record keeping function in your Center?

Very well organized	Fairly organized	Deficiently organized	Poorly organized
( )	( )	( )	( )

Other observations: ____

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7. SELF-PERCEPTION (Do not answer if you would like to keep some opinions for yourself)

7.1 How do you feel about the fact of being a student at UNA?

Greatly satisfied	Satisfied	Not very satisfied	Unsatisfied
( )	( )	( )	( )

7.2 Do you perceive that UNA will be helpful for your self-development?

I am very sure	I am sure	I have doubts on that	I do not think so
( )	( )	( )	( )

7.3 Do the programs that UNA offers to you satisfy your expectations of career development?

Completely	Well	Fairly Well	Not Adequately
( )	( )	( )	( )

7.4 Do you think that UNA is really opening the access to Higher Education?

Absolutely agree	Agree	Not sure	Disagree
( )	( )	( )	( )

Other observations: ____

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